DOCUMENT RESUME

ED 130 054 CE 008 297

AUTHOR	McKinney, Floyd L., Ed.; Sims, E. Norman, Ed.
TITLE	Proceedings of a Series of Workshops on Writing Research and Development Proposals: A Final Report. Kentucky Research in Vocational Education Series, No. 2.
INSTITUTION	Kentucky State Dept. of Education, Frankfort. Bureau of Vocational Education.
PUB DATE	Oct 74
NOTE	163p.
EDRS PRICE	MF-$0.83 HC-$8.69 Plus Postage.
DESCRIPTORS	Administrative Personnel; *Educational Research; Educational Researchers; Evaluation Methods; *Reports; Research Coordinating Units; Research Directors; Research Methodology; Research Needs; *Research Proposals; Speeches; Technical Education; *Technical Writing; Vocational Directors; *Vocational Education; Workshops; Writing
IDENTIFIERS	Kentucky

ABSTRACT

This book contains presentations made at a series of 3-day workshops held in Kentucky to prepare vocational educators to write proposals, progress reports, and final reports for research and development efforts. Workshop presentation included "Need for Research and Development in Vocational-Technical Education," by Robert Warmbrod, Alfred J. Mannebach, and Elizabeth Ray; "Developing Ideas, Explaining and Stating the Problem," by Glen Davis; "Related Research," by E. Norman Sims; "Developing Objectives," by Floyd McKinney; "Methodology or Procedure," by Janie L. Jones; "Personnel Plan," by Herbert Bruce; "Dissemination Plan," by E. Norman Sims; "Evaluation Plan," by Herbert Bruce; "Developing the Budget," by B. Glen Davis; "Proposal Submission and Review;" "Preparing Progress Reports and Final Reports," by Louis Perry; and "Managing the Research and Development Project," by Robert Schneider. Included also are workshop objectives and procedures, the conclusions which were based upon the formal and informal evaluations conducted both during and after the workshops, and the recommendations formulated by the workshop staff. (HD)

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No. 2

Kentucky Research
in Vocational
Education Series

Proceedings of a Series of Workshops on Writing Research and Development Proposals:
A Final Report

Bureau of Vocational
Education
Kentucky Department of
Education

PROCEEDINGS OF A SERIES OF WORKSHOPS ON WRITING RESEARCH AND DEVELOPMENT PROPOSALS: A FINAL REPORT

EDITORS

Floyd L. McKinney
Director
Vocational Program Supporting
Services Division
Bureau of Vocational Education

E. Norman Sims
Coordinator
Information Dissemination
Bureau of Vocational Education

October
1974

PRINTED WITH STATE FUNDS
KRS 57.375

CE 008 297

THESE WORKSHOPS WERE SPONSORED BY THE
KENTUCKY STATE DEPARTMENT OF EDUCATION
Dr. Lyman V. Ginger
Superintendent of Public Instruction

BUREAU OF VOCATIONAL EDUCATION
Dr. Carl F. Lamar
Assistant Superintendent of Public Instruction

PROGRAM SUPPORTING SERVICES DIVISION
Dr. Floyd L. McKinney
Director

ACKNOWLEDGMENTS

To a most enthusiastic group of workshop participants, the workshop staff is deeply indebted. All of the participants entered and left the workshops with a sincere dedication to accomplishing the objectives of the workshops.

The workshop staff accepted the responsibility for planning and conducting these workshops as an overload to their regular responsibilities and duties. As usual, they responded with enthusiasm.

The consultants for the workshops were outstanding educators with an understanding and experience-based background of research and development activities in vocational-technical education. Their ability to communicate effectively with the workshop participants was most welcome and helpful.

The secretarial assistance provided by Esther Wigglesworth, Kathy Montgomery, Barbie Ferguson, Carolyn Bryan, Dottie Fulk, and Terry Tracey was most helpful in planning, conducting, and following-up the workshop.

Editors

This document represents the second in a series of Bureau of Vocational Education publications called the Research in Vocational Education Series. This document, *Proceedings of a Series of Workshops on Writing Research and Development Proposals: A Final Report*, has been made a part of the Series because it is a valuable aid to those considering conducting a research project and those already conducting such a project.

The first of this Series, *A Guide for the Development of Proposals, Progress and Final Reports* (RIVES NO. 1), was meant to contain all of the information which is necessary for the production of documents which meet Bureau of Vocational Education and U.S. Office of Education technical guidelines. It is our hope that this second in the RIVES series will offer "cookbook" suggestions which will make your research, exemplary and dissemination work much easier.

Editors

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CHAPTER I

INTRODUCTION

Background

Very few people employed in vocational education in Kentucky have had educational experiences which prepare them to deal in a meaningful way with the requirements of the research and development community. Most vocational educators perform admirably in the research and development field once they have participated in the appropriate kinds of educational experiences oriented to helping them relate to the requirements of the research and development community.

If vocational education is to move forward, it is necessary that it make increased use of research and development efforts. For research and development to move forward in the vocational-education ranks, there must be an increased competency level in regard to proposal development and report writing. It was the intent of the workshop staff to develop certain competencies of selected individuals in regard to proposal development and report writing.

Objectives

The general goal of the workshop was to prepare vocational educators to write proposals, progress reports, and final reports for research and development efforts. More specifically, at the conclusion of the workshops, the participants were to be able to:

1. Write a proposal for a research and development project which:
    a. identifies and clearly defines a significant problem area for vocational and technical education,

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b. develops a new model and/or system or demonstrates a research based idea,

c. states objectives in performance terms,

d. has a sound rationale,

e. details the procedures by which the objectives are to be accomplished,

f. describes a management plan as outlined in *Educational Project Management* by Desmond Cook,

g. describes an internal and external evaluation plan,

h. indicates the feasibility of using the results of the project to improve vocational-technical education,

i. outlines plans for disseminating the results of the project,

j. provides for the employment and/or use of professional and supporting personnel,

k. describes the facilities and equipment needed for the project,

l. indicates how needed cooperative agreements will be secured,

m. indicates the commitment of the staff of the applicant agency for project support,

n. presents a time schedule for the completion of the major events in conducting the project,

o. presents the proposed plan for financing the project, and

    p. contains appropriate kinds of materials in the appendix.

2. Outline the steps in submitting proposals to funding agencies.

3. Identify references helpful in writing proposals.

4. Accurately complete cover pages, budget forms and other relevant forms.

5. Write progress reports which:

    a. describe major activities and accomplishments during the reporting period,

    b. describe departures from the original plan,

    c. describe special problems encountered or expected,

    d. identify significant findings and events,

    e. summarize the dissemination activities of the project,

    f. report capital equipment acquisitions,

    g. describe progress made in gathering information,

    h. identify and describe changes in staff personnel or staffing plans by additions, departures, or revisions of time or other commitments to the project,

    i. report future activities planned for the next reporting period.

6. Write final reports which:

a. utilize required cover, title, and content pages,

b. accurately and concisely summarize the project,

c. presents a general introductory section to orient the reader to the research problem or activity,

d. details the methods used to carry out the project objectives,

e. presents the results and findings of the project,

f. presents what was or was not accomplished in the project (conclusions),

g. clearly identifies possible recommendations,

h. contains appropriate kinds of materials in the appendix, and

i. meet the required specifications for size, typing, paper, pagination, binding, tabular presentation, and pictures or illustrations.

General Plan of Operation

The project involved planning, conducting, and evaluating three, three-day workshops held in Madisonville, Kentucky, June 9-12, 1974; Louisville, Kentucky, July 14-17, 1974; and Lexington, Kentucky, July 21-24, 1974. The workshop programs were designed to actively involve the participants in a variety of activities specifically designed to promote the achievement of the objectives for the workshops. The major presentations in the workshops focused on the major components of proposals and reports.

Following major presentations, the participants met in small group sessions where they worked individually, in school, or regional groupings to develop a proposal according to the guidelines and suggestions presented in the workshop.

CHAPTER II

METHODS AND PROCEDURES

Selection of Participants

Letters of invitation to attend one of the workshops were sent to all regional personnel in vocational education and to all local school superintendents.

The workshops were conducted so that all of those interested in attending were accepted.

Planning the Workshops

The workshop director and the major workshop presenters functioned as a management team in planning and conducting all phases of the workshop. This group developed the workshop objectives, outlined the content topics, detailed the general workshop procedures, and selected the consultants for the workshop.

Plans were made for small group activity during the workshop. The small group leaders met to discuss the role of the small group leader, the purpose of the small groups, and methods for evaluating the work of the small groups.

All individuals pre-registered for all workshop sessions.

Conducting the Workshops

The workshops were held June 9-12, 1974, in Madisonville, Kentucky; July 14-17, 1974, in Louisville, Kentucky; and July 21-24, 1974, in Lexington, Kentucky. The workshop format was the same for all of the workshops. A complete copy of one of the workshop programs appears in Appendix A.

In general, the workshop format consisted of major presentations followed by questions from the participants. Most of the major participants used participant work-oriented activities related to the content of their presentation. To assist in developing workshop continuity each presenter related his participant work activities to one common proposal which was developed as the workshop progressed.

Opportunity was provided in the small group sessions for the participants to discuss and react with the workshop staff concerning the ideas presented by the speakers. An attempt was made to assign individuals to groups where they would find fellow workshop participants with common interests. Either on an individual or very small group basis the workshop participants developed a proposal during the workshop.

Evaluating the Workshops

Four to six workshop participants were chosen by the workshop staff at each workshop to act as "interpreters." The interpreters were representative of the different professional backgrounds and positions of the total group of participants attending the workshop. They were also judged to be capable of grasping the significance and evaluating comments made by the workshop participants. The interpreters usually met once a day with the workshop staff to provide feedback regarding changes that should be made in the workshop.

A second form of evaluation used was the administration of the "Inventory on Preparing Proposals." The instrument was developed by the workshop staff and was administered as a pre- and post-test.

At the conclusion of each major presentation the workshop participants were asked to complete a form, "Participant Evaluation of Presentation" (See Appendix B). The completed forms were used by the workshop staff to improve their presentations.

At the concluding session of the workshop each participant responded to a workshop evaluation scale (See Appendix C). The responses of the participants are presented in Chapter IV.

The ultimate evaluation of the significance and value of the workshops will be reflected in participant developed proposals and reports which more adequately reflect acceptable research and development standards.

THE NEED FOR RESEARCH AND DEVELOPMENT IN VOCATIONAL EDUCATION*

I would like to open my remarks this evening with telling you a true story that was related to me by a teacher of vocational education in an area vocational school in Ohio. Jim was enrolled in a vocational course – we'll call it Course A – in the area vocational center during his junior year. He showed little enthusiasm for the course or for school in general. His attendance was poor, and as you would expect, his grades in general education courses as well as his grades in vocational courses were, at best, marginal. At the end of the junior year Jim elected or was counseled into taking Course B the following year at the area vocational center. During his senior year Jim's attitude, motivation, and performance were about as different from the previous year as possible. He was highly motivated to perform well in courses and on the job. He attended school regularly and his grades were the highest he had ever earned. In fact, his employer for supervised occupational experience came to school at mid-year requesting that arrangements be made whereby Jim could work for him full-time because he wanted Jim to train the other employees. At the end of the senior year, Jim was recognized as the outstanding student at the area vocational school.

I want you to take this episode and do a little research. I want you to begin to speculate and answer these questions: Why did Jim change his behavior? How do you explain the tremendous change in Jim's behavior? You have the information I have given; about all you know is that a change from one vocational course to another occurred. We are going to come back to Jim near the end of the presentation. I want to use this episode as a way of illustrating some points about research in vocational education.

---

*Edited transcription of address by Dr. Robert Warmbrod at "Workshop on the Preparation of Proposals." June 9, 1974: Madisonville, Kentucky.

I suspect some of you are somewhat skeptical about research. Perhaps you think that research is something that professors do or maybe some people in state departments of education might be engaged in research activities. If you are in a large school district, there may be a research section. You may have an attitude that these people are researching things that are not very practical. They are not paying attention to what's going on in the real world. Another criticism that we frequently hear of research is that it is too slow to do any good. We need information today to make decisions. When decision-makers are told that a research project will take three years to complete, it is not unusual for them to reply, "I don't have three years to wait! I have to move today and your research is not going to do me any good."

Even when the research is completed, the researcher frequently writes a report that is very difficult to understand; it appears that he or she is trying to impress someone with the language used. They throw around chi square, analysis of variance, sampling theory and all of this jazz; most of the time the reader really doesn't want to know that much about it. All the reader wants to know is: Will it work?

In other comments made this evening I caught the impression that you are researchers and you are about to become even better researchers as a result of this workshop. I don't think you want people saying those things about you. So what I would like to do this evening is to share with you some general thoughts on the topic of the need for research and development. In the process of that discussion, hopefully, I want to get at some of the very basic ideas of what research is all about and the application of these ideas to vocational-technical education.

I begin by asking this question: What is research? You can find some very scholarly definitions of research. I would like to approach it from a slightly different point of view. The goal of the research is to make contributions to practice. The research that you and I are dealing with should be research that leads to change in practice. We

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do away with something because it isn't working; we establish some policy or practice to get the job done. Research and development are parts of the same package. We do research which leads to development. The research process should provide valid and reliable information that can be used by decision makers. Researchers need to provide information that can be used in developing policy, in developing programs, and in evaluating whether or not what we are doing is worth doing. The definition of research that I like is one given by the late Professor H.M. Hamlin of the University of Illinois.

> Research is an unusually stubborn and persisting effort to think straight, which involves the gathering and the intelligent use of relevant data. (*American Vocational Journal*, September 1966)

Let's take a look to the various facets of the definition of research. First, research is a process. It is a process that begins with the feeling that something is wrong, a feeling that something could be better, or a feeling of curiosity. We recognize a real problem and then we collect data about it. We gather relevant data and then we make intelligent use of that data. If you want to be more sophisticated, research is the scientific method; it is the method of science. You use the method of science every day; in fact you use it many, many times every day. You use the scientific method so often that you are not aware that you are using it. I like this description of the method of science.

> People talk about "the scientific method" as if it were some magic computer-like method of solving all of our thinking problems. There is nothing magical about it, but only a slightly formal kind of common sense: What is the question? shall I seek the answer through experimentation, or reading what different people have discovered? how do my results stack up after considering the negatives as well as the positives? where can I go from this answer so as to evolve my own theory or solution? (Royal Bank of Canada Monthly Letter, February 1971)

With this general background, I would like for you to think with me for a few minutes about becoming a more stubborn and a more persistent investigator. Perhaps some of us have already been accused of being stubborn or persistent, or both.

First, we have to deal with selecting appropriate and relevant problems for systematic inquiry. Research is not only a "formal kind of common sense," it is also systematic. So an appropriate problem is the beginning point. Professor Hamlin, who I quoted earlier, said that "Ideas and concepts are the first requisite for good research. Research without important ideas is busywork." If you don't have a significant problem to research, you are probably wasting your time. One criticism of research is that we are not dealing with real-world problems. You have a very unique opportunity to remedy that. You are living the real-world problems. So all you have to do is decide which of your problems need investigating in a systematic manner. Probably you can solve many of the problems as you drive to work in the morning or as you work in your office or classroom. But many times, it requires more systematic investigation. All problems can be researched; don't go around saying, "this I need to study, but this I cannot because there is no way to get my hands on it." Some problems are more indefinite and difficult than others, but at least you can apply the process even if you don't get as definite an answer in some cases as you do in others.

I recommend that the place to begin looking for researchable problems is to take a look at the "sacred cows," the things we take for granted. I challenge those of us in vocational education to put our sacred cows to the test. Let's find out for sure if what we are doing is right. I have a feeling that some of the things that we are doing may not stand that kind of a test.

You have to be careful when it comes to selecting problems; sometimes you find some outlandish problems. I don't want you to get caught like the researcher in the following incident. In a publication of the U.S. Department of Agriculture there was an article titled "Talking Eggs." It was a report of research designed to investigate whether unhatched eggs communicate with each other. A scientist was studying this problem and his research was reported in the article. A skeptic wrote the editor claiming that there was a better use for tax money than for this guy to try to find out if eggs talk to each other. The editor gave the letter to the scientist and asked him to prepare a reply. Here is part of what the scientist wrote:

> You're right, sometimes it seems that some of our scientists are not using good common sense in some of their research. However, modern scientists are trained to look for unusual methods and to use sophisticated tools to solve tough problems . . . For example, anyone using common horse sense would know that you can't get anywhere incubating eggs from turkeys which have not been mated. Yet in 1953, a scientist did just that, and discovered that the eggs hatched resulting in fatherless turkeys. Some people may still wonder about the value of fatherless turkeys, but they have turned out to be of tremendous interest for science. (Agricultural Situation, September 1970)

Well, it was kind of a foolish question to be researched. But they tried it and it worked. Perhaps the scientist was wrong about the eggs talking thing, but the only way to find out is to research the problem. Maybe eggs do talk to each other. I use this example in my classes frequently, and after one class last summer I happened to see a headline in the *Wall Street Journal* that caught my eye. Guess what I saw on page one?

> The Birds and Bees Can't Explain Births
> of Certain Turkeys
>
> Mother hens can have poults and keep their virtue, too; Is a virus better than sex? Here's a question for you: Can a virgin turkey be a mother?
>
> According to poultry scientists here at Pennsylvania State University, the answer is an

> unequivocal yes. As a matter of fact, they say, virgin births occur so often in turkey circles these days, they hardly raise eyebrows anymore.

The point I want to make is that you are in a position to come up with the tough problems; some might be a little unusual. Remember there are a lot of usual and ordinary problems also. Research is no good unless the problem that is being researched is worth investigating. There is no magic as to how you decide whether a problem is worth studying. My graduate students frequently ask "How can I decide which of this list of problems I should research for my dissertation or thesis?" The best answer I know is to use your good common sense.

Now I want to take a quick look at some of the difficulties you are going to encounter in conducting research. One of the serious problems is in collecting data. Much use is made of the questionnaire and interview; more frequently than not we use a questionnaire. The first big problem is that many people file our questionnaires. How can we find out what's going on if half the people never return the questionnaire? You have to come up with clever ways of getting responses like this UPI release from Paducah, Kentucky.

> The public school system here has a novel way to insure that recipients of their mail don't throw it away without opening it.
>
> The letter sent out by the school system carries this notice: 'Warning: If you throw this in your waste basket unopened, a capsule of water inside will break, spilling onto a dehydrated gorilla. He will then jump out of the envelope and hug you to death.'

You have to think of ways like that to get people to at least look at your questionnaire.

Well, that's only one problem. You've got to get the questionnaire returned, but even then there are other difficulties.

One of these problems is illustrated by the following conversation between a turtle and a bug in the Pogo comic strip. I hope you read Pogo. I think there's a great deal of wisdom there.

Turtle: To ease your mind on humans we should take a big fat survey.

Bug: An' then refer the report to a committee?

Turtle: Right . . . then the committee could issue a prognostic preview any Congers could call for a vote.

Bug: Forestallin' the revolution?

Turtle: Sure . . . we'd query all types . . . . bugs, mongeese, antelopes, bandicoots . . . all them . . . . and find out how many hidden humans there are.

Bug: We'd ask human beans too?

Turtle: To be scrupulous fair, yeh.

Bug (This is the punch line): How could you be sure some of them wouldn't lie about it?

That is one of the problems with questionnaries. Are you sure people aren't lying? Now you've never lied on a questionnaire; I've never done it, but those other people do. They don't give you the right answer. First of all, some think it is none of your business. Others want to make themselves look good, so they tend to answer the way they think they are supposed to answer. These illustrate some problems you have to deal with if you are going to be doing research.

Accuracy of the data is important. Pogo, the possum, has another lesson about that as he talks with three rats dressed like bums.

Pogo: So you rats are gonna be pollsters for P. T. Bridgeport?

First rat: Yep . . . altho P. T. don't always play it fair.

Second rat: Yep . . . last time we run a poll for him if he didn't like our results, he changed the whole thing.

Third rat: Very embarrassin'.

Pogo: I should guess so . . . that'd make the prognostication wrong!

First rat: Well, what was most embarrassin' was it made it right.

So the first type of question that research can help answer is: What is the situation? What are the facts? The second kind of question the researcher investigates is illustrated by these questions: Why do things happen the way they do? What factors tend to accompany certain outcomes of programs? What characteristics do students have who are most successful? Here we are trying to relate one factor to another in an effort to establish some kind of a relationship.

Let me give an example. One of my students recently studied the value of youth organizations for vocational students. His claim was that the more a student participates in the vocational youth organization in high school, the better leader that student will be and the more successful that student will be on the job. So the question he was investigating was: What is the relationship between the extent to which a vocational student participates in a vocational youth organization and the student's capability in leadership, citizenship, and success on the job? Guess what he found--the more a student participates in youth organizations the higher he or she was rated in leadership and the more successful he or she was on the job. That is what he wanted to confirm, but research doesn't stop there. This type of research is very difficult to interpret. Let me illustrate by relating some additional findings. The higher their grades were in high school, the higher they were rated in leadership and the more successful they were on the job; the more years of vocational education they completed in high school the higher they were rated on the job and the higher they were rated on leadership ability; the higher their social economic status the more successful they were on the job and the better they were in leadership. You can see that there are several factors, in addition to participation in vocational youth organizations, that are related to success on the job. Now here is the clincher--he also found out that the more they participated in vocational youth organizations the smarter they were, the higher their social economic status, and the more years in vocational education they completed. In effect, the very same factors that tend to be related job success are the same factors that tend to be related to participation in vocational youth organizations. Conclusion: Participation in vocational youth organizations may have little influence on leadership ability and success on the job. Undoubtedly, the characteristics of a person may be the major influences of leadership ability and success on the job. So you see, we have to be very careful in interpreting research that investigates relationships. We must be careful not to interpret correlation as causation.

Let me illustrate the point that just because things go together it doesn't mean one causes the other. We know that there is a relatively high positive correlation between the average annual salary for ministers and the annual expenditure for alcoholic beverages in this country. The more money the preachers make, the more booze we drink. In the northern states, there is a high positive correlation between the monthly number of deaths by drowning and the gross monthly sales of ice cream cones. The more ice cream eaten, the more people are drowned. Now, to describe the magnitude of these relationships is one thing, but to claim that deaths by drowning can be eliminated by a law banning ice cream parlors makes about as much sense as to argue that you and I can raise our minister's salary by going to the bar after this meeting.

Let's move to the third type of question that is frequently probed by the researcher. The question to be asked is: What would happen if? What would happen if we were to do things this way? What would happen if we tried this? Here we are attempting to control some outcome. If we do something a certain way, we can control what happens; if I teach students this way, they will learn more than if I taught them some other way. With this type of research we face a lot of problems, particularly when it comes to interpreting what causes the outcome we observe. Now the best advice I can give comes from a very expert person in research who is commonly addressed as "Dear Abby." I want to illustrate what I am talking about with this letter that Abby received.

> Dear Abby: I have just started to date, and I have a problem which is common to most girls my age. It seems that every time that I go out with a boy, if I let him kiss me on the first date I never see him again. But then if I don't let him kiss me, I will never see him again either. So how is a girl supposed to know what to do? Just wondering.
>
> Dear Just--She can assume that whether she kisses a boy or not on the first date has nothing to do with whether she ever sees him again. And go to work on other possible causes for being a one-date-dolly.

Before the researcher announces to the world that certain outcomes are caused by certain factors, he had better make sure there were not "other possible causes" for the results.

Once we get a valid study – we know that the findings are true – we also have a problem about the generalizability of the results. Can I apply this any place else? There are a lot of things you have to do as a researcher that will help or hinder in making this transfer from your research setting to some other place. I would like to demonstrate that difficulty by calling your attention to a television commercial.

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In 1970, an actor frequently plugged Excedrin on television with this statement: "Two Excedrin were more effective for the relief of pain than twice as many aspirin." For most of us I suspect the kind of pain that immediately comes to mind is a headache when we hear comments about aspirin and pain. Well, as you might expect, the Bayer Aspirin people didn't particularly like that commercial. They claimed that it wasn't true information, that there was a credibility gap. Well, the manufacturers of Excedrin defended the commercial claiming that the information was based upon an accurate and truthful summary of a clinical study done by reputable and expert scientists. They added, however, that the commercial referred to a different kind of pain--not pain suffered by people with splitting headaches, but by women who had just given birth! We need to be careful about how we generalize findings of research to another situation. The next time you see that commercial, listen for two or three words that have been inserted. Now, tucked somewhere in a rather inconspicuous place in the commercial are the words "a different kind of pain."

We have talked about three different kinds of research problems. What are the factors that describe a situation or group? What are the relationships? What are the causes of outcomes? Once you have the information, it is another thing to interpret it. Frequently, we get conflicting findings, so interpretation is very important. Let me give you an example. Here is where the intelligent use of data is involved. Just because you have data doesn't mean your problem is solved. You have to be able to use it intelligently. The example has to do with studies on the cost-effectiveness of vocational-technical education. One group of studies led to the conclusion that greater educational benefits in monetary terms could be gained by shifting resources away from vocational education in high schools to other types of education. Other studies have led to this conclusion: Additional public funds that have been spent on the vocational-technical curricula rather than on the non-vocational senior high school curricula. How could you find two conclusions that were more conflicting? Which finding do you trust? Which finding is the more valid? Unless you know something about re[illegible] and know how to interpret research findings, you don't know which conclusion to buy.

We have to be very careful about the ways we interpret information. Let me give you another example. A rural sociologist found that youth had changed their occupational aspirations and expectations in late adolescence with about half of them becoming less realistic in their aspirations, that is, they changed their aspirations to higher goals. The sociologists interpret this to mean that their aspirations become less realistic. One implication of the interpretation is that more attention should be given to intensive vocational guidance during the latter part of high school experience so students do not select occupational goals they have little chance of achieving. Others have given this interpretation to the research. They argue that no attempt should be made to stifle aspirations but that programs should be changed to allow students to achieve those aspirations. These are two ways of looking at that particular research. Here is where values get involved in interpreting research. The following episode from the Wizard of Id comic strip illustrates how facts can be interpreted.

> Wizard (speaking to the King): My studies show a direct correlation between increased taxes and crime rates.
>
> King: What conclusions have you drawn?
>
> Wizard: They can steal it as fast as you can.

So you have to be careful when interpreting research. Interpretation of what the findings mean, what the implications are, and what is being recommended must be included in the report of the research. The communication of the results of research is very important. I am very pleased to see as I thumb through your workshop program that you are going to talk about reporting research. I will let Linus and Charlie Brown give you a hint of one difficulty encountered in writing reports of research.

Charlie Brown (approaching Linus who is making a snowman): Well, Linus, did you have a good Christmas?

Linus: What do you mean by "good"? Do you mean did I get a lot of presents? Or do you mean did I give a lot of presents? Are you referring to the weather or the Christmas dinner we had? Do you mean was my Christmas good in a spiritual sense? Do you mean was my Christmas good in that I saw new meaning in old things? Or do you mean . . . .

Charlie Brown: Sigh!

Well, when you start writing reports, be careful with the words you use and don't just throw around words like good and better. You must get very specific and precise.

In summary, what does all of this assortment of comic-strip wisdom and Dear Abby letters mean for research? First, I think it appropriate to point out that the main theme of the presentation is this: The research that we conduct and the outcomes of that research will be valid and reliable only to the extent those of us conducting the research make it so. If we are a sloppy researcher, the results are not going to be worth the paper they are written on. That kind of research is a waste of someone's money and a waste of our time.

Remember, research is a process. The scientific method teaches us to be aware of our certainties and to admit that we have doubts. If you are dogmatic and if you are very sure of everything, you are probably not going to make a very good researcher. We have to begin to question what we are doing and what we assume to be true. The process requires that we begin with significant problems. It means that we collect relevant data and that we intelligently use the data.

Let's go back to Jim. Remember after Jim changed courses in the area vocational school he also changed his behavior. Why did he change? What are some possible explanations you have proposed? Was it because Course B was so much better than Course A? Maybe Teacher B was much better than Teacher A; maybe Jim's attitudes changed; maybe his parents finally got to him. What do you think really changed Jim? I don't know what explanations you propose; but if you have formulated some possible explanations, you are participating in the research process. Now you need to collect some data to see if your hunch was right.

Well, let me tell you what Jim's teacher said. Was the new program in which Jim was enrolled his senior year the factor accounting for his change in behavior? The teacher relating the incident was not naive enough to answer "yes." In fact, the teacher was perceptive enough to answer "no." The reason for the teacher's response was that the teacher knew that Jim was married between the end of the junior year and the beginning of the senior year – a happening prompted, by the way, by the fact that his becoming a father was imminent. This new responsibility, which undoubtedly Jim took very seriously, was the factor the teacher credits as the prime motive for Jim's change in behavior. In fact, the teacher was very emphatic and indicated that he was well aware that the same results could have been observed had Jim been enrolled in any course in the school curriculum. It wasn't the course that made the difference; it was Jim who made the difference.

The lesson is that we look for those "other possible causes." We must not automatically assume that when we get the results we are looking for that the results are always produced by the factors we expected. After this workshop, you are going to be able to take care of these research design and interpretation problems. I am sure you will not interpret research as indicated by the following.

> Test 1. Remove the front two legs from a grasshopper and place it on a table top. Give the verbal command: Crawl! Result: Grasshopper crawled.

Test 2. Remove the second set of front legs from the same grasshopper and replace it on the table top. Give the verbal command: Crawl! Result: Grasshopper crawled.

Test 3. Remove the back legs from the same grasshopper, leaving him no legs and replace it on the table top. Give the verbal command: Crawl! Result: Grasshopper did not crawl.

Conclusion: It has been determined beyond all doubt by a series of tests using exacting scientific methods that a grasshopper with all its legs removed can no longer hear!

THE NEED FOR RESEARCH AND DEVELOPMENT IN VOCATIONAL-TECHNICAL EDUCATION*

It is really great to be back in Kentucky in a professional role. The three years I spent here were very beneficial to me, and I enjoyed them tremendously. I was back in the great Commonwealth of Kentucky in May of this year and had a chance to visit at that time with some of the people that I had worked with previously. I am always impressed with the beauty of this State and the friendliness, openness, and hospitality of the people. I must admit that, as a former Kentuckian, I really do miss the State. I miss its beauty, its people and am always happy to come back.

I remember another time when I was in Louisville in a professional role. That was in May, 1970, when Floyd and I were new on the staff at Kentucky Research Coordinating Unit. We were in Louisville to conduct a five-day MDTA evaluation workshop. Some of you probably still remember that workshop. In that one week, Floyd and I had the opportunity to really get to know the practitioners in vocational education in Kentucky. The success of that workshop was one of the things that gave us the confidence to try other ideas and to try to help practitioners in vocational education do their job more effectively. The workshop served as a starting point for doing what we are doing today. I am sure that it had a tremendous influence on my activities and I think that it did on Floyd's too.

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*Paper presented at the Workshop on the Preparation of Proposals by Dr. Alfred J. Mannebach, July 14, 1974: Louisville, Kentucky.

Tonight, I am here to discuss with you the need for research and development in vocational-technical education. I know that a systematic workshop format that is logical and psychologically sound has been planned by the workshop staff. In the three days that follow, I am sure that you will learn how to prepare proposals in a manner that will help you present your idea effectively. A proposal will help you get across the ideas of what it is that you want to do. However, when you start talking about proposals, that implies involvement in research and development. And many people don't fully understand the need for research and development--how it affects them, or how they can be involved.

Many people are afraid of research and maybe even turned off by it to a certain extent. But I am here to help allay your fears. I hope that in this workshop we can present research at a level that you can understand. In research, we are trying to help you do better what it is you are trying to do. So, I hope you will become familiar with the terminology used in research and development and understand what research and proposal writing are all about in the next three days.

Realizing the situation, what I would like to do at this point is to survey your thoughts and feelings regarding your present conception of what constitutes vocational education research. Please raise your hand if the answer is yes, hold your hand out if you are undecided, and lower your hand if the answer is no.

How many of you have ever been a research subject or participant? Have you ever participated in a research project of any kind? See, we have had some involvement already. Research is not foreign to many of us. Many of you have been involved in research in some way.

How many of you have ever conducted a research and development project? Good, a number of you have. So really, we are not talking about something that is totally unfamiliar to us.

How many of you think that research and development has made a significant, positive impact on vocational education in the last ten years? Great, when we think about it and when we look back ten years, we see that something has led the way--the Vocational Education Act of 1963 and the Vocational Education Amendments of 1968. These acts have come about as a result of some of the research and development in vocational education.

How many of you think that research and development in education has kept abreast of research and development in business and industry? Let's see the hands. Not too many agree. At this point we perceive that we in education are probably lagging behind.

How many of you think that more money should be spent for research and development in vocational education. Good, we have a lot of people feeling that more money is needed. We can see the need at the regional level, and I am sure we see the need at the State level. Good proposals should help us spend the available money more effectively.

How many of you think that vocational educators like yourselves should be involved in research and development? Good. At the regional level-- where the programs are, where the people are, and where the program improvements take place--is really one of the major areas where research and development should take place. I think that it is very important that we perceive research and development to be a part of our job and not leave it solely to the so called "experts."

How many of you think that you have some ideas that you would like to develop and then share with others? Let's get the hands up. Excellent. In each of our regions we have got ideas that we would like to try out. The development of a proposal is the best way to test an idea and put it into action.

How many of you would like to have some high-risk money to try out one of your ideas? Very good. I suspect that many of you are thinking, "If I had some money, maybe I could develop an idea that would make a significant contribution to the program of vocational education."

How many of you would be willing to write a proposal to get some financial assistance so you could try out an idea or solve a particular problem? Good, we have got many of you tuned in right now. You're saying "yes," you are willing to do these things. A few of you still need some encouragement, but we will try to allay your fears as we go along.

I think that the last three questions that we have asked are very important to you. I hope that you are thinking in terms of I, a coordinator, a director, a teacher educator, or whoever you might be as having an idea to develop or a problem to solve, obtaining some financial assistance, and writing a proposal in a systematic way. As I have mentioned, when you leave this workshop on Wednesday, I hope that you will have the tools to put your ideas to work. I think that the tool that we will develop will be a positive tool, something that will be very important to you.

At this point, I want to impress upon you the need for your involvement in research and development. It is important that people be involved at the regional level--where the programs are, where the people are, and where program improvement takes place. I want you to realize the possibility of program improvement because of your involvement in research and development. I also want you to consider the impact that research and development activities can have for students and the vocational education program at the local, regional and State level. The impact can be significant and you can play an important role in doing something different, in developing new ideas, and in solving some of the problems that exist in your situation.

At this time, I want to discuss with you three particular areas. First, I would like to present an overview of the need for research and development in vocational-technical education. Second, I would like to indicate some areas that are fertile for research and development in vocational education. Third, I would like to show some advantages of your being involved in a research and development program.

First, let's look at the overall need for research and development in vocational education. We live in a fast changing, dynamic world. During the past few years, we have witnessed tremendous growth and change in the physical sciences. Increased specialization, improved communication, mass transportation and tremendous changes in science and technology have taken place.

While there has also been a rapid change in the social sciences; namely, health, education, and welfare, the changes in the social sciences have not taken place as fast as in the physical sciences. The result is what some sociologists call a cultural lag. What they are saying is that the technology in the physical sciences has run away from the ability of the social institutions to adapt to the changes and technology. Cultural lag creates a situation that brings about a situation of unrest and turmoil. Many people have adjustment problems because they cannot adjust or adapt. We find that many people were born too late to live the life for which they were conditioned and too early to live the life that they envision. In other words, people are in stress situations because technology is running wild and people and social institutions are very slow in adjusting to these changes or charting their direction.

Looking at it in another way, we can say that our beliefs and attitudes are derived from a past, a past that is no longer relevant to the present. When we start talking about the future, we can see the problems that face us. These conditions have tremendous implications for vocational educators who are working with people and who are attempting to accomplish at the secondary level the primary objectives of self realization, economic efficiency, human relationships and civic responsibility.

Let's look at a youngster who weighs 95 pounds and wants to be a pro football player. Let's temper that with the reality of what it takes to become economically efficient. The student may have all the interest in the world of being a pro football player, but when he looks at the abilities and the reality of the situation, does he really have the ability to succeed? So we have to help the student to temper that self-realization with something in which he can become economically efficient. In all cases, human relationships play a very important part, and we have to pay attention to that particular aspect along with the civic responsibility.

The point is this, "How can we in our programs focus on the needs of students and how can we help people attain these primary educational objectives? Not only should teachers be concerned about these objectives, students should come to recognize the importance of these objectives too.

Let's see how this particular situation, to a certain extent, affects a particular child today. We live in a democratic society and one of the things that we try to do with a young child is to make him independent. We do a pretty good job of this up until the time that he is a first or second grader. As a case in point, a person came up to me the other day and he said, "You know my little second grader came home from school all disturbed the other day. One of the reasons why she was disturbed was because last year when she wanted to go to the potty, all she had to do was get up and go regardless of the activity. But this year as a second grader, she had to raise her hand and ask if she could go to the potty." I think that is one of the things that's significant in terms of our school systems. As students move from the elementary to the junior high to the senior high school level, we find that the curriculum narrows the students down more and more. Teachers become more and more prescriptive in terms of what they try to teach the students. They squeeze kids into a mold. At the same time, the amount of knowledge in the world is increasing to the point to where teachers can't keep abreast of all the knowledge that exists.

What teachers try to do is keep abreast technically and in doing so what really happens is that they become subject matter oriented rather than student oriented. They become disseminators of information rather than directors of the learning activity. They make students dependent rather than independent. When students drop out of school or graduate, they are expected to be independent. But for about ten or twelve years of schooling, we make them very dependent upon the system and upon us as educators. Then we release them into the cold hard world, again asking them to be independent. In doing so we usurp their responsibility, stymie their motivations, and do things for them that they could be doing for themselves. In addition, as we teach, we often fail to develop with the students the reasons why we are studying a certain topic or certain subject matter.

A perfect example would be in an American Government class. How many times do you think that students have the opportunity to vote in American Government? Probably none. Yet, isn't that what democracy is all about? Very few times do the students have a chance to vote, yet we graduate them into the cold-hard world and wonder why they don't vote.

One of the things that I think is very important as a result of this situation is the saying that I picked up from the *Learning Magazine*. This particular saying is, "If people don't learn to learn as children, there is little likelihood they will learn at all." How do we help students learn how to learn? Because ultimately, it is not what we can pour into students. It is how well we can get students to do for themselves what it is that they need to do in order to survive in this world. It is how well we prepare them to cope with things that are very important to them.

What we need to do is shift some of control to the learner, help him understand what it is that he needs to know about himself, about the world of work, and about the peer, parental, and social pressures that come to bear upon his educational and occupational decisions. When we shift control, we help the student internalize his own purposes and values. We help him make his education rather than just take it.

What I am saying here is that we must go back and reflect upon the four purposes of education and the "Seven Cardinal Principles of Secondary Education." We must help students to recognize and internalize those purposes. We want those purposes to become an integral part of student's reasons for being in school. Looking at it in another way, Toffler has suggested that perhaps ninety percent of what today's infant needs to study during the course of his education has not even been discovered, invented, or designed yet. Yet, we recognize that most teachers are still subject matter and textbook oriented. At the same time, we recognize that teachers are not completing the textbook. They are being very selective of what they teach. They try to prescribe rather than direct the learning activity and help the students to recognize what it is that they need to know and be able to do in order to survive in this fast-changing world.

What I am saying is that as a result of the tremendous changes that have taken place in technology, the pressure that has resulted from the information overload and cultural lag has increased. Research and development are needed to help institutions and society adjust and adapt to the rapid technological changes. While we are talking about the need for research and development, I would like to show an example of what a large scale research and development effort can do. In the 1960's President John F. Kennedy stated a national goal. This goal was that we as a nation were to send a man to the moon and return him safely by 1970. This was a very simple kind of a statement. But just think of all the research and development activities created by this national goal. This national goal has had a tremendous impact on our society. Many developments have resulted from just trying to get a man to the moon, a very simple statement of an objective.

On a smaller scale, I believe that if we as leaders in vocational-technical education will dare to specify some of our goals in terms of what it is that we want to accomplish, if we will write them down and share them with others, if we will make them priority and put our efforts into accomplishing them, then we can be as successful as was the United States Space Mission.

So, in summary, what I am saying is that there is a great deal of research and development needed to meet current and future needs and to get the programs and people in tune with the contemporary problems that we face. I would hope that most of the research and development that we are talking about would have to do with such areas as staff development, curriculum improvement, updating, etc. Enough for the need for vocational education research and development on the broad scale.

Now let's turn to the second point – some ideas or areas that are fertile for research and development in vocational education. Research is needed to provide answers or partial answers as to how to cope with changes that are taking place in society. Development is needed to help put these answers into operation. We need both. We need research and development. As you ponder ideas or identify problems that you would like to research or develop, you should be thinking in broad terms.

Research and development proposals may be written in many areas. As I have mentioned, research and development is needed in personnel development, needs identification, the needs of business and industry for trained workers, curriculum development in special education for the disadvantaged and handicapped, in exemplary programs, in career education, and in other areas.

Another way of looking at areas fertile for research and development is from the standpoint of impact areas of vocational education. As we look at this particular transparency, we can see that on the one hand, we have the vocational student and on the other hand, we have the vocational opportunity. In order to try to get these two together we have an underlying vocational education program. As a result, we have what we can call the vocational product.

If we start with the vocational student, we recognize that there are many things about the students that we do not know. A lot of data that we do not have, could and probably should be researched. We should probably study such things as aptitudes, attitudes, interests, motivations, aspirations, socio-economic origin, intelligence, and social and occupational adjustment.

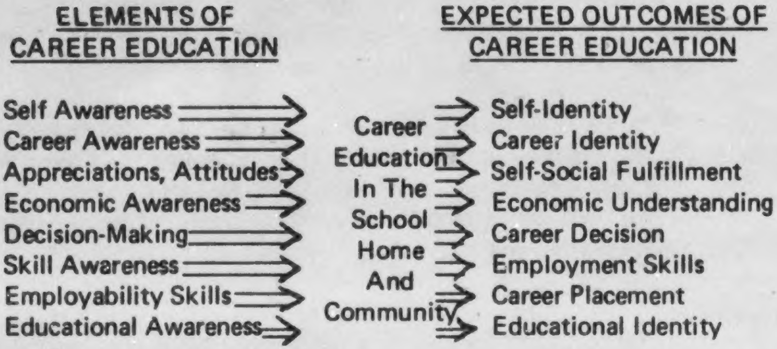
One problem that we face as vocational educators is that we tend to teach the skill and hope that social and occupational adjustment will happen automatically. Sometimes we operate under that premise. I would submit to you that this is probably totally false, because when we reviewed some of our MDTA programs and some of the other kinds of programs that we had in operation, our people didn't have too many technical problems. Technically, they were well qualified. Where they really did need help was in making the social and cultural adjustment. Research and development is needed in that particular area when it comes to a placement and advancement on the job and other job adjustment abilities. The vocational student then, is a prime target for research and development activities.

When we look at the need for research in the area of vocational opportunities, I know that there is a lot of activity taking place on a statewide basis that will provide you some information. Yet, one of the things that is very essential for you as a coordinator is to make sure that your teachers get out into business and industry and find out what that vocational opportunity really consists of today, not ten years ago when this person was a welder or auto body mechanic or whatever he was, but today in business and industry.

Floyd has indicated that an exchange program for teachers in business and industry has been set up. I am sure happy to see that. This kind of program is very important. Research needs to be conducted to determine employment opportunities, needed competencies, changing technology, human mobility, and skill level desired.

The vocational program needs continuous research and development. We can study teachers, curriculum, methods, facilities, student services, administrative structure, teacher education and supervision. All of these, again, are fertile areas for research and development, because what was done in 1963 will probably need to be changed in the future. Some things will carry over, but we must continually adjust, we must continually change the program if it is to keep abreast of the changes in society, business and industry. So, if we are going to keep abreast of these changes, we must have continuous research and development.

Looking at fertile areas for research and development from another standpoint, we recognize that we have a vocational product who may be concerned about job potential, employment, adaptability, job security, job satisfaction, retraining, upgrading placement and follow-up. All of these are areas that may require some research and development. They are areas that are fertile for research and development activities in Kentucky and other states at the local level as well as at regional and State level. We can look at the need of some of these impact areas from a different model that was created; namely, the career education model. The following chart shows the elements and expected outcomes of career education.



ELEMENTS OF CAREER EDUCATION

Self Awareness
Career Awareness
Appreciations, Attitudes
Economic Awareness
Decision-Making
Skill Awareness
Employability Skills
Educational Awareness

Career Education In The School Home And Community

EXPECTED OUTCOMES OF CAREER EDUCATION

Self-Identity
Career Identity
Self-Social Fulfillment
Economic Understanding
Career Decision
Employment Skills
Career Placement
Educational Identity

As we analyze the model, do the students really have the self awareness of who they are and what they want to become that we as vocational educators would like to have them to have? Even though we assume that the students possess the elements, we are probably making false assumptions. For, I believe that many of our students are way out to the left, they are not even at the self awareness, the career awareness, or the economic awareness stages. We are not even to educational awareness to the point that the student sees education as a vehicle for getting him where he wants to go. So it's a long way over to self identity, to career identity, to career placement and educational identity. These are some of the challenges that face us as vocational educators who are continually trying to help people adapt and adjust to the world of work. Research and development are needed in our efforts.

So you can see that there are many areas in which proposals can be written. Part of the program of this workshop will be helping you identify and develop problems and ideas for study.

I would now like to show you what I think are some of the advantages of your being involved in research and development, and more specifically, in research and development proposal writing. By learning to write a proposal you really are developing a generic skill; a very powerful tool that can be used in many areas of your life. This tool or generic skill can be used to identify problems explicitly, to present ideas so that somebody will pay attention and read them, to secure finances to help you find solutions to your problems, or to develop more fully your ideas. This tool will also help you communicate to others plans for what you want to accomplish, plans at the local and regional levels, where again, programs are, people are, and improvements take place. Skill at proposal writing is a tool to help you clarify and specify your personal goals and plans. What I am saying to you is that, by learning to write a proposal, each one of you is developing a generic skill, one that can be used in many situations. Proposal writing skills can be used in your personal situation, your job situation, and in program improvement situations.

A proposal is a plan, a plan that helps you think through the problem or idea, a plan that helps you conceptualize the need, the rationale, the objectives of the proposal. It helps you think through the procedures necessary to accomplish the objectives and to visualize the expected outcomes. Having this generic tool, having these skills, can be of tremendous value to you. Writing a proposal is putting to use one of the most powerful tools that we have. This particular powerful tool is the whole power of inquiry. Have we ever thought of the power that the word "inquiry" really connotates? We can inquire from many sources; we can inquire from books, we can inquire from television, we can inquire from other people, we can inquire from researchers or the people who know. But how many of us really recognize that we have this generic skill? And how many of us send out into the world of work many of our graduates from our programs who don't even recognize that having the skill of inquiry is probably as important a skill as the vocational skills that they develop in the shops and laboratories?

When we discuss research, we're talking about systematic inquiry. Learning to write a proposal helps us to inquire in a systematic manner. Proposal development helps us to formalize our questions, specify our ideas, and define our problems.

Being involved in research and development is:

- to dare to try something new
- to enrich the humdrum of our daily activities by focusing in an important problem
- to put ideas on paper
- to give priority to important issues
- to communicate those ideas to others, and to initiate action.

So you must come to this workshop with a positive attitude, open mind, and willingness to share your ideas with your colleagues. If you don't have this openness, then the return will be much less than is possible.

Vocational educators in Kentucky are innovative. You have top quality State and University leadership. Personnel at the State level are willing and ready to assist you with your problems. Be open with them and communicate your ideas and problems to them. They may be able to help you. Formalizing your concerns in writing through a proposal will certainly help get dollars behind the solution of problems.

The workshop staff is here to help you. At the end of this workshop, you should have developed proposal writing skills. I wish you luck in this endeavor, and I'm sure that by working together, sharing ideas, focusing on important issues and problems, and by taking action, research and development will work for you and consequently improve and enrich the program of vocational-technical education in Kentucky.

RESEARCH AND DEVELOPMENT IN VOCATIONAL EDUCATION – WHAT IT IS AND WHAT IT OUGHT TO BE*

William Hazlitt once pointed out that . . ."Man is the only animal that laughs and weeps for he is the only animal that is confronted with the difference between what things are and what they ought to be." As a long time member of the underworld of vocational education, I can appreciate and marvel at the tremendous advances that we've made in the past ten years.

In the early 60's, as a new era for vocational education was being forged, criticisms came from many directions, questions regarding both present and future prospects were highly threatening to most of us. Meetings with our counterparts in the U.S. Office of Education were characterized by doomsday predictions about being taken over by the Sociologists, Psychologists, Economists. We were led to believe that the political atmosphere was pretty noxious.

Much has happened as a result of the legislation that emerged in the form of the Vocational Act of 1963 and happenings have characterized the ensuing years through the '68 Amendments, the career education thrust, and the various sequels to these.

There has been tremendous growth in the field. From a scattered few well qualified researchers and administrators, we, through the early national research seminars of the sixties to the many, many research and development workshops like this one, have probably reached a point where our needs are now merely to respond to growth demands rather than to a genuine shortage.

In the early '60's, for the most part, vocational educators were unable to provide the information sought by legislators. We chased our tails attempting to establish evidence that our programs were even reaching the right people. To have established that they were cost-effective was beyond the capacity of any but the elite. Today, a respectable proportion of our programs are monitored by some recognized accounting system and I might say that Kentucky is certainly recognized among these. States and school districts appear to be able to provide needed data without much hassle.

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*Edited transcription of address by Dr. Elizabeth Ray, July 21, 1974: Lexington, Kentucky.

In 1974, when someone from that almost extinct species, the U.S. Office of Education, asks for data, we can feed them more than they care to know about a great many aspects of vocational education. We are not greatly threatened when we tell them that we don't have evidence of the sort they seek, and that's because we have so much data of all kinds from which to select.

At this point, too, states, schools and teachers are able to get money to carry out programs which are not from the conventional mold. In many schools, to be a vocational teacher is to have certain privileges and status not afforded other teachers, and I think some of us have lived in a time when that wasn't exactly the case. Some may presently be living in a time when it is not the case, but at least in the current atmosphere there are many — both teachers and students — who are finding life better in vocational education.

In 1974, we have a very respectable number of people with excellent credentials to be researchers and to raise fundamental questions about the nature of work, of occupations, about the role of work in the private lives of people, and about the relation of these to the real world. Unfortunately, most of these people are not doing that. They are passing themselves off — and if any of you recognize yourselves, don't throw anything right now — as directors of vocational education, directors of research coordinating units, as proposal writers and fund seekers for school districts, as accountants for elaborate state systems of vocational education, as program evaluators, teacher educators, college administrators, directors of research training on campuses.

In all of these, what we have are people who really expected in the sixties that they were going to become researchers and that there would be money for them to do research. The money has come into vocational education but somehow it has not gone to basic research and so, unfortunately, we are, I think, wasting some very valuable resources in our field. Some of the waste results from under-employment of highly qualified personnel, and some comes from having diverted money away from the urgently needed search for new knowledge.

The great influx of monies into vocational education which is really earmarked for research and development has been in the past years so highly intermingled with politics that no one cared to set aside money for addressing the hard questions in our society and in vocational education. The money has ended up in small chunks in each of the states, regardless of whether the state has research interests or competent personnel. It ends up in small pieces in school districts within states and in even smaller grants to fund projects for people such as you here, attending a workshop on how to write fundable proposals.

Many knowledgeable professionals agree that no money of consequence is going to get out of Washington unemcumbered, therefore it is apparent that the breakthroughs in vocational education will have to come from funds allocated to states and to people like you, gathered together here. There are no more THEYS in this business, WE are it and what I am saying is that we may, ten years ago, have thought we would train some basic researchers who would be funded to spend the rest of their lives in ivory towers helping us to understand and to straighten out vocational education. There's no way it's going to happen.

Maybe what seems unfortunate on the one hand has turned out on the other hand to be a good thing, however, because now, we, all of us — teachers, administrators, teacher educators — are having to put our heads together to figure out a way to do what needs to be done even though we don't have much money.

Actually, I am quite interested in the system which gives local districts and teachers the opportunity to devise their own programs and curricula and to get their own funding. However, these schemes are not going to provide systematic evidence unless we get organized. For the most part, the record keeping and reporting required will not provide information needed for replication of findings.

Those more sophisticated researchers who are guiding your efforts – and I am talking about the people who are running your workshop here this week – have got to develop some uniquely useful measures and validate them in your school districts and within the state or across several related states. Then there must be some common basis for comparing one innovative program with another. And then when we get beyond head counts, earning power and employment records as evidence of success, we will be closer to the level of maturity that we desperately need to reach in vocational education. My notion is that each proposal would contain a common battery of tests in addition to any used specifically in individual projects. It is my belief that to the degree that teachers in schools and schools in districts can collaborate, we have a chance of doing something that will add up to new knowledge in vocational education.

For it seems to me that, in many ways, our record in the midst of a very successful decade is embarrassingly meager. For example, in vocational education which cries out for highly individualized structures, the curriculum shows locked-step instruction predominating.

While new laws are requiring that schools bring slow learners, retarded, and handicapped back into the mainstream of education programs, we in vocational education are in many cases still asking if there is a place for them in our programs.

With most of the social barriers to integration of men and women, and of ethnic groups removed, equal opportunities are hardest to find in some vocational education programs. Women's

Equity Action League is having a heyday as they get ready to take on the discriminatory practices of sex stereotyped enrollments in vocational education and I shudder at the day when they take on the State Departments of Vocational Education.

Though task analysis and competency testing are special tools of vocational educators, few of our programs emerge as models for other fields and this seems to me to be, again, an unfortunate failing on our part. The rapidly expanding literature on CBTE is significantly lacking in contributions from our field.

Though essentiall[illegible] men and all women work for the largest proportion of their [illegible]me, the issue of what role formal education and the tax paye[illegible]ould play in relation to that reality continues unresolved. I ha[illegible] to believe that vocational educators ought to be providing the answers and not waiting for Congress to identify priority concern for them.

Even if it's "what kids need," I abhor the heavy handed authoritarian tone of many vocational educators. There is much evidence that learning takes place in situations where the teacher is less direct and is a model of the warm, well adjusted equalitarian human. Yet, many vocational students are treated heavy handedly in schools because our teachers are not helped to appreciate the difference between firmness and authoritarianism.

I think it is an embarrassment and a disgrace that vocational education prepares some people for jobs which do not pay a living wage, which have no status in the community, which afford people very little sense of worth and dignity. It seems to me that each person deserves the opportunity to try his hand at a job that has meaning and pays at least the minimum wage when he starts. The manpower model for vocational education must be discarded in favor of HUMAN POWER.

Now, shall we say that it seems the opportunity for you in Kentucky to do something fundamental about conditions in vocational education is great. When you work through a system where you have help in developing the kinds of programs and proposals that you want, and you are working together so that you have some kind of opportunity to collaborate with each other.

I hope you'll see your efforts at writing projects for your schools and for your own programs as something that can pay off for kids, for vocational education and for yourself professionally. For we could all feel better about the field if we could help people to make more of their lives than what they have up to this point. And as one vocational educator to fellow vocational educators: we don't really need to find different values or better values but we do need to be more faithful to those to which we have committed ourselves.

DEVELOPING IDEAS, EXPLAINING AND STATING THE PROBLEM

B. Glen Davis

Before you can adequately state a problem, you need to develop some kind of rationale or background. Webster defines rationale as "an explanation or controlling principles of opinion, belief, practice or phenomena."

It has been said that ideas are the root of creation. Ideas are the factors that lift civilization. They create revolutions. In developing the idea for a research proposal one may wish to think in these terms.

In developing the idea for a proposal, one should first survey the existing situation. In doing this preliminary groundwork it may be advantageous to discuss the existing situation with some of the more knowledgeable people concerned. If the idea being developed is to encompass a larger segment of the community than the educational institutions, it may be necessary to sound out groups more familiar with the entire community, such as civic clubs and chambers of commerce. One should be especially sensitive to the "power structure" in a community when developing an idea for research and stating the background.

After surveying the existing situation, the researcher will be able to assess certain needs. These needs may be felt or unfelt in the community. It is imperative here that the researcher be familiar with the definitions of a need and be able to justify such. A need could well be defined as the gap which exists between what is and what should be.

It is necessary before you start developing an idea to set up some type of procedure to follow. After surveying the existing situation, one might well develop a list of phenomena to be used in the rationale or background statement leading up to the problem.

Some of these could be:

1. Major changes in the educational system to occur within the next few years.

2. Major changes to occur in the community within the next few years.

3. What is presently happening to graduates, are they staying in the community or leaving?

4. Major "road blocks" to be encountered.

This list should cover all the phenomena which the researcher has observed during the survey of the existing situation.

After developing this list, the researcher will undoubtedly see a number of problem areas. The researcher has now reached a point of decision, that being to decide on a specific area in which to conduct research. Realizing that one of the major drawbacks to many research projects is condensing the problem statement to a specific area this activity becomes of the utmost importance.

It may be well at this point to refresh our memories on the three principle types of research:

1. Historical research – the investigation of events, developments and experiences of the past – in other words, what was.

2. Descriptive research – the investigation of events, developments, and experiences that are taking place now – in other words, what is.

3. Experimental research – the investigation of events, developments, and experiences as they relate to what will happen in the future – in other words, what will be.

Most behavioral research is a combination of the last two types, but relying heavily on previous historical research.

It is extremely important in writing a research proposal to know what the problem is. Kerlinger says if one wants to solve a problem, one must generally know what the problem is.[1] It can be said that a large part of the solution to a problem lies in knowing what one is trying to do.

What is a problem? A research problem is often defined as an interrogative sentence or statement that asks: What relation exists between two or more variables? Kerlinger lists three criteria of good problems:

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[1] Kerlinger, Fred N., *Foundations of Behavioral Research,* Second Edition, Holt, Rinehart and Winston, Ind., N.Y., 1964. p. 17

1. The problem should express a relation between two or more variables.
2. The problem should be stated clearly and unambiguously in question form.
3. The problem should imply possibilities of empirical testing.

One might well test a problem statement using these criteria before submitting a research proposal. Below are two examples of problem statements.

A. Will the introduction of career education into the junior high school increase the percentage of students enrolling in vocational courses in high school?

B. Will the utilization of the career education concept in the instructional program in junior high schools more adequately prepare students to make realistic course choices in preparation for their life work?

The first example of a problem statement meets the first criteria in that it expresses a relation between two variables, the introduction of career education into the junior high school and percentage of students enrolling in vocational courses in high school. This problem is clearly and unambiguously stated and it can be empirically tested by observing the percentage change of vocational course enrollment in high school after career education was introduced at the junior high level. While this problem statement meets all three of the criteria of a good problem, it may be considered too elementary for a research proposal.

The second example listed above is more complex and many researchers would consider it more sophisticated. While it clearly expresses a relationship between two or more variables one could question the clarity and ambiguousness. What are more realistic course choices, who makes this determination and how easily could it be empirically tested?

These are realistic problems which the developer of a research proposal should consider and critically evaluate before submitting a problem statement.

RELATED RESEARCH RESOURCES AND TECHNIQUES

E. Norman Sims

Generally, when anyone begins a research project, he is a little bit frightened. The vocabulary is confusing, the statistics make one wary, and the required procedures are such a nuisance that it may be more trouble to start a project than to finish it. Once a researcher gets into a project, however, he finds that it is really not much of a problem if; he has started with a researchable problem, shown what educational significance will accrue from the results, and developed a sound research design.

For most of us these tips are pretty meaningless. How do we know the problem is researchable? How can we develop the correct research design? The answers to these questions are available through related research.

Too often research and demonstration projects have been undertaken without fully capitalizing upon the successes and failures of earlier projects. This mistake should be avoided if at all possible as a researcher's limited resources do not allow the luxury of rediscovering the wheel with each and every project.

The sources for your predevelopmental research can be overwhelming. You probably have used some of them before without thinking of them as repositories of knowledge which the researcher can draw upon in the preparation of a project. Generally, these sources are: other personnel, libraries, indices, and ERIC.

Other Personnel

The good researcher should never be afraid to consult others for information. Your colleagues may know a great deal more than you give them credit for, and, even if they don't, they may know someone who does.

Consult the Bureau of Vocational Education personnel. The Bureau has staff specialists in many areas of vocational-technical education. Do you have a problem with an experimental design? Call the Research Coordinator in the Bureau. Do you have an innovative curriculum change but don't know what to do with it? Contact the Coordinator of Exemplary Programs.

Don't overlook those outside of education as well. Someone in the fire department may be most helpful in developing a project related to fire safety. Businessmen may offer fresh and constructive information for an exemplary co-op program.

Every individual is a walking storehouse of information, and the good researcher makes use of it.

Libraries

Almost everyone has used the resources available in a library. The public library is possibly the best known, and most often used, information clearinghouse. The television, the movies, and popular myth, have depicted the librarian as being crotchety, ill mannered, and short tempered: nothing could be further from the truth. The average librarian wants you to use the materials which the library contains. He is well versed in research procedures, knows what he has available, and most importantly, knows where everything is. Once a librarian has been told who you are, what the problem is which you are researching, and what types of information you are seeking, he can work closely with you to meet your needs. Moreover, many libraries work within an information consortium. If your library does not have a book you want, but another library in the consortium does, it can be ordered, and generally you can have it within two or three days. Your librarian is your contact for this service.

In Kentucky, libraries are readily available. The Resource Room in the Bureau of Vocational Education contains many sources which you might wish to consult when searching for research material. Each document is coded according to topic area and indexed in a central file. At the time of this writing these documents are also being cross-indexed alphabetically by author's name and document title.

Many researchers have a tendency to overlook or discount the school library or their local public library. They usually feel that the holdings are not specialized enough for their needs. Often, though, the local library is an excellent place to start your research. Moreover, these libraries may be connected to the information consortium, discussed above, which makes specialized information available.

Universities in Kentucky tend to have good to excellent library facilities and are generally easy to use. Most of these libraries have restrictions on who may check out materials, however, so if you don't want to study a document in the library only, you might need to find someone to check it out for you.

College libraries generally offer very general to very specific material, and these are indexed in a card catalogue. University libraries have a tendency to make their card indexing systems complicated, but you can usually figure it out after about five minutes by yourself or two minutes with the librarian. Services offered by the university library are varied but usually include a booklet, free to those who ask, which explains the layout of the library and its services. At least one university library (University of Kentucky) has an extremely helpful and specialized set of these brochures.*

When utilizing a university library, remember that this may not be the only library on campus. This is the "main" library, and there may be numerous departmental and college libraries and reading rooms. Usually any holding which exists on campus is indexed in the main library, but this is not always the case; so it is safer to ask.

Library and research materials are also available from Frankfort through two holding centers. One, the State Department of Education Library, is located on the seventeenth floor of the Capital Plaza Tower. The other, the State Library, is located in the Library and Archives building. These sources should be contacted directly for information dealing with their holdings and procedures.

The Index

There are numerous indices available to the researcher. One, the library card catalogue which we have already discussed, is indexed by topic, author, and title. Other indices do exist and serve the same purpose as the card catalogue: they are guides for facilitating reference.

Educational indexes most often used are *RIE* (Research in Education) and *CIJE* (Current Index to Journals in Education). *RIE* and *CIJE* are available from most university libraries and the Department of Education Library.

Dissertation Abstracts and *Dissertation Abstracts International* are available in most large public libraries and all university libraries.

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*The University of Kentucky has numerous college and departmental libraries. A brochure is available to the user telling where these are located and what they contain.

The *Dissertation Abstracts* offer the same abstracting service as *RIE* and *CIJE*, but only include submitted and approved dissertations. The *Dissertation Abstracts* are shelved by date and number.

The field of vocational education is also served by its own abstracting system: *AIM* and *ARM*. Up until just a short time ago these were separate publications with *AIM* taking its name from Abstracts of Instructional Material, and *ARM* being Abstracts of Research Material. They have now been merged as *AIM/ARM* and are divided into three sections:

1. Instructional Material

2. Research Material

3. Projects in Progress

The Instructional Material section includes a listing of all curriculum and instructional materials and has three subdivisions: Abstracts, Author Index, and Subject Index.

The Research Materials section includes all research and related materials. This section includes abstracts, and author index, and a subject index.

The Projects in Progress section has two major subdivisions entitled, "Research Projects in Progress" and "Curriculum Development in Progress." The Research Projects in Progress subdivision has three main parts which include a title index by state, abstracts of research projects in progress, and a list of all state research coordinating units. The Curriculum Development in Progress subdivision also has three parts, including a title index by state, abstracts, and a listing of all curriculum management centers in the nation.

An annual cumulative subject and author index to *AIM/ARM* is issued each year.

While the parts, division, and subdivisions of *AIM/ARM* taken at a glance may seem confusing, the document is very easy to use. The *AIM/ARM* abstract presents information about the document's authors, titles, availability, and content which should help you decide whether you want to read the full text of the document.

The Subject and Author Indexes help you locate, by subject descriptors and by author/institution names, abstracts of documents relevant to your information needs.

The Projects in Progress Section, divided into Curriculum and Research subsections, announces through title by state indexes and abstracts, in-progress research and curriculum development projects funded by the Vocational Education Amendments of 1968 (Public Law 90-576), Parts C, D, and I. The Curriculum subsection of Projects in Progress contains information which should help keep you aware of ongoing activities in vocational and technical education curriculum development and research.

AIM/ARM are available from many sources including university libraries and the Bureau's Resource Room. Subscriptions to *AIM/ARM* are available by writing:

AIM/ARM
The Center for Vocational and
Technical Education
The Ohio State University
1960 Kenny Road
Columbus, Ohio 43210

Subscriptions are for one (1) calendar year period only, and cost $34. Subscribers receive a year's volume consisting of six bi-monthly issues (e.g., numbers 1-6) and the annual, cumulative, subject and author index.

Information Services Provided by the Kentucky Department of Education

The Kentucky Department of Education offers some valuable services to the researcher. The department offers such services as: hand searches of the ERIC library and other information sources; computer searches of the ERIC library when a comprehensive search of literature is needed; and free copies of microfiche documents found in hand can be provided to vocational teachers or project personnel.

As you may have noted, most of these services are performed around the ERIC (Educational Resources Information Center) system. ERIC is, basically, a national information network for acquiring, abstracting, indexing, storing, retrieving, and disseminating the most significant and timely educational research reports and program descriptions. The system is simple to use if an information request form is properly completed and the following steps are followed:

Step 1: Decide exactly what you want to know.

Step 2: State the problem or question clearly.

Step 3: Decide what kind of answer you want. Do you want it voluminous and inclusive for a broad bibliography or small and exclusive for a few key articles which best meet your need?

Step 4: Examine each major term used in the statement. Are there any other terms with overlapping meanings which should be included? If you want to know about "inservice training," "workshops," and "summer institutes," it is wise to include all of them in the statement. If you are only interested in "summer institutes," just use the one term.

Step 5: To ask for a search, call or send the request form to:

Coordinator of Dissemination
Bureau of Vocational Education
Frankfort, Kentucky 40601
(502) 564-3096

or

Director of Dissemination
Department of Education
Frankfort, Kentucky 40601
(502) 564-4394

From the search you will be able to obtain abstracts of documents relating to your problem area, and from these documents decide what microfiche you would like to receive. Please do not request hard copy or microfiche if you have not checked the abstracts for the documents you really want to use.

Please don't request more "hits" than you know you can readily handle. A request which reads, "Everything you've got on Career Education," could result in thousands of citations and would require that we check back with you about your problem statement. This can only slow your search.

Paper copy of documents is available, but only on a limited basis. Microfiche copy is available at no charge. If your school does not own a microfiche reader, and if there is no library or other facility near you which offers the reader, the Bureau of Vocational Education has a limited number of portable readers which are available on a fifteen day loan system. Check with the Coordinator of Dissemination for the loan of a reader.

We have not made an attempt to give you a list of all of the resources which are available to you for doing research related to your topic area. These are but a few of the ones most often used by educational researchers. We do feel, however, that this can give you a good start toward the development of a well-planned proposal.

DEVELOPING OBJECTIVES

Floyd McKinney

Objectives provide direction and meaning for what one is doing, or about to do. Webster defines an objective as something toward which effort is directed; an aim or end of action which must be attained. Objectives clarify and give direction to action and, under most circumstances, possess the following characteristics:

1. They contain action verbs
2. They specify a key result to be accomplished
3. They specify a target date for accomplishment
4. They are specific and quantitative, that is, as measurable and verifiable as possible
5. They specify what and when
6. They are easily understandable
7. They are realistic and attainable, and
8. They are consistent with the resources available or anticipated.

Components of an Objective

We can look more specifically at three components of an objective which, if contained, insure the possession of all of the

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above listed characteristics. Number one, and perhaps the most important component, is the action verb. This verb describes the action or behavior which is to take place. This verb also specifies what the learner is to do or what is to be attained by a proposal once implemented. One should always use action verbs which are observable, measurable, verifiable, and reliable (not prone to varying interpretation). A proposal reader and analyzer cannot read the mind of the proposal writer to see how well what has been written is understood. Only through some overt activity or some known result of the proposal can the extent of the knowledge or skill be measured. So, the action verb of the objective should specifically state what the proposal is designed for. Examples of action verbs of varying quality include the following:

CRITERIA FOR VERBS	POOR VERBS	BETTER VERBS	BEST VERBS
Observable	Appreciate	Compare	Add
Measurable	Be aware of	Compute	Adjust
Verifiable	Be interested in	Construct	Check off
Reliable	Enjoy	Differentiate	Fill in blank
	Feel	Indicate	Give (an example)
	Know	Operate	Group
	Understand	Predict	Label
		Recite	Point at
		Solve	State (a rule)
		Write	Turn

The second segment of an objective which enables the writer to communicate intent and exclude the greatest number of alternatives, is the conditions. The conditions describe the environment in which the task must be performed.

A third segment of an objective is the standard which is a statement of the output or outcome. A standard specifies how well something is to be done. It may specify by what date an objective is to be accomplished or the level of acceptable performance.

Although each of the segments of an objective may help the objective to be more specific, it is not always necessary to include all three. The objective is to write objectives that communicate; the three characteristics explained are merely guides to help a person know when the objective has been met. You do not continually work on an objective until it demonstrates these three segments; rather you work on it until it communicates your intended outcomes.

Kinds of Objectives

In writing your proposal it may be helpful to develop objectives which relate to products, processes, and management. In general, all of the criteria in the preceding sections apply to all of these different kinds of objectives.

Obviously product objectives are related to the outcomes of the project. Outcomes may be the development of an instrument, the development and field-test of a system to accomplish a specific purpose, the discovery of new information, or a multitude of other products.

Process objectives are concerned with the actions or operations needing to be performed to attain the product objectives. In some proposals the writer may be interested in developing a process to accomplish a specified goal. The writer still would need to delineate the "process objectives" to be used in attaining the project outcomes.

Management objectives relate to the direction and operation of the project. They should be specific and include time frames and assign responsibilities.

Summary

The objectives of the project should be specific, measurable, concrete and achievable. The objectives should also be written so that only one major measurable item is included in each statement.

The objectives should be listed in approximate order of importance and, to be successful, should reflect clarity and preciseness.

The objectives should be derived from the need, background, related research and problem statement for the proposed effort. The objectives are most important to the success of the project as they form the basis for what the writer presents in the procedures, evaluation and budget sections. The total proposal, then, must directly relate to the objectives.

Most importantly, the objectives must relate to the expected products or outcomes of the proposed project. In addition, most projects should have statements of objectives concerning the project instructional or operational processes and the project management processes.

RESEARCH METHODOLOGY AND PROCEDURE

Janie L. Jones

No matter what the purpose of a project, the writer must be able to clearly order his ideas and set down a problem statement and project objectives. The basis of all research and development projects is the ever present need to improve the programs, services, and activities of the education setting. Unless you are able to develop a problem statement which is able to clearly define the starting point of the project, you really are unable to properly prepare the remainder of the project.

Other writers in this booklet have previously demonstrated the development of the problem statement. Properly stated, your problem statement will be invaluable in developing the procedure or methodology from project operation. Let's consider two problem statements taken from projects which were funded in the area of career education:

> There exists a need to provide decision makers with empirical data for purposes of strengthening, enhancing, and extending programs of career education in the Commonwealth of Kentucky.

This problem statement points to a problem: Data about presently functioning career education projects which will be of use to state administrators in their decision making responsibilities. However, note that the fence around the area of concern is quite broad. The population under study is not specified. It could have been specified more tightly by stating the school districts, instructors, instructions, students, parents, and so on, was the population under study. Since it was not done in the problem statement, the parameter of participation was defined elsewhere.

> Principals of schools in a regional career education project must commit their time and effort at an early date in order to enhance the possibility of success of the overall career education project.

The purpose here is to get the school principals committed to fostering career education in the regional career education project. This problem differs in that it specifies what group of people constitute the population under study. That population was made up of all principals in schools who are participating in the career education project.

As you can see, the population parameter may or may not be specified in the problem statement.

Let's go back to our hypothetical situation of the "Glen Oak School System." Before determining specific methodology for project operation, let us say, for example, that, within the present proposal for a career education project, we are concerned with the career maturity of students. For our purposes we can say that one of our goals in career education is the development of a student's knowledge of various job requirements in terms of the student's personal needs and desires. Furthermore, if the overall concept of career education is working in Glen Oak, results of the career maturity inventory should indicate greater levels of career maturity by students. Therefore, our problem statement becomes:

> Will the utilization of the career education concept in the instructional program in Appleton Junior High more adequately prepare students to make realistic course choices in preparation for their life work?

Based on the previous discussion, it soon becomes evident that our population under study consists of, at most, the student body at Appleton Middle School. As was previously mentioned, our desire is to utilize the Career Maturity Inventory (CMI) to gather data. After inspection we notice that CMI has a minimum reading level of grade 7. Since Glen Oak seems to be an average or normal system, we would hesitate in using it in grade 7 and definitely not in grade 6. For purpose of this research project we will restrict our population (Total groups of people who may be used when collecting data) to eighth graders enrolled in Appleton Middle School during the project period. The population could have been defined in a variety of ways. The concern is not whether the population parameters are right or wrong, but are they workable? The project writer must weigh many concerns to arrive at the determination of a population which is manageable. The population defined will be the one he must work with in the project. In our definition of population we could have said it consisted of all 14 year olds in the city limits of Glen Oak. Can you see the future problems that could have arisen from this decision?

Now that we have a population defined, we must give consideration as to how we should go about drawing a sample! This is not the easiest choice to make as this decision will influence the analysis of the data and the type of statistics that may be used. Do you want to draw a single sample, random in nature? Do you want to stratify by race, sex, or other category? Do you want to test by class size samples or individually? Class sampling does make the administration of the instrument easier, as the group is all in one place without needing to be rounded up or taken from their class. By sampling individually you may want to stratify and select 85% non-black and 15% black students to approximate the racial mixture of the class. Most often by individually sampling you can make the standard assumptions necessary to analyze the data using parametric – Z, T, or F – statistics. There are a variety of good statistics books available to assist in calculating the actual statistic. The calculation is relatively simple. If you analyze by a more complex strategy, the bureau staff can assist you in calculating. In view of the previous questions about the population, sample, and statistic, let's be sure to define our population as all eighth graders enrolled at Appleton Middle School during the 1974-75 school year. Since the 15% of the black students are randomly placed in class assignments, as are the other students, we will not stratify by race. Because of the same assumption, neither will we stratify by sex.

Needless to say, the sample, design, and instrumentation will all affect correct analysis of the data.

Up until now we have been basically talking about the population and how to draw a workable sample. Another influence on the outcomes is the design used to capture the research data. There are several resource texts available for use when attempting to determine data gathering strategy. For our purposes we are using Campbell and Stanley's *Experimental and Quasi-Experimental Designs for Research*. If you would thumb through this book, you will find a variety of X's, 0's, R's, and dashed lines. Campbell and Stanley consider a number of design formations. The first three designs are called "Pre-Experimental," the next group are called "True Experimental," and the remainder are called

"Quasi-Experimental" designs.* For the project proposal, at least one of the sample designs should fit your needs.

In research, our desire is to determine what effect an introduced experimental condition in our example, career education instruction; has upon the career maturity of students in the eighth grade at Glen Oak Middle School in looking at the variety of designs. It is always best to use the simplest design that will do the job: that is, answer the research question posed in the beginning. You should also keep in mind that the design helps you in a variety of ways. First of all it is a planning and organizing tool: it provides a basic time table for collecting data. In teaching, and research on teaching, you find a very large number of potential variables which can contaminate the research. One may want to know, for example, the effects of race, sex, socio-economic, physical and mental handicaps, and how these and other variables affect career maturity development! It is very easy to expand the easy to use design, into a design which is similar to a nightmare. In this context Campbell and Stanley's "True Experimental" designs provide the best general overall operational setting, since they provide control over many extraneous variables. I do not want to take the time here to detail the first six designs. However, it would be worth your time to read the introduction and first six designs descriptions in the Campbell and Stanley Book.

There are several problems, concerns, etc. that we have not discussed which also influence the choice of experimental design. In setting up an experimental condition as part of our research problem we build in operational restrictions. Here in Glen Oak the entire Middle School, staff as well as students will all be subjected to the career education concept. You can see that this leaves no part of our population who will not be part of the experimental condition. In other words there will be no true control group available. This situation must cause us to slightly modify our direction in the design, but the overall difference must be tolerated. Since we have mentioned control (no experimental condition) groups, let us make a point or two about them. If, in your research project you can define a control group that is within the same school building, composed of the same population as the experimental group, then you can justify that control group. This condition is very difficult to get, because students have a habit of relating experiences to one another. There is almost no way, when research human behavior, that a control group can be obtained which is totally free and independent from the experimental group. Just their physical proximity to one another introduces extraneous biases causing errors in the data to be gathered. Usually one is better off if two or more comparison groups can be obtained instead of control group. Under certain conditions, and you may have those conditions in your project, the control group may be used. The control group provides the best 'base line' data and is the best for comparison purposes with the experimental conditions. It is very difficult to develop that group.

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*As it is neither the purpose nor intention of this chapter to teach research methodology, much of the research detail has been excluded. We would suggest that the reader consult any of the fine research methodology texts available.

Let's go back to the design for our research project.

$$0_1 \; X \; 0_2$$

The above is design number two from Campbell and Stanely. The "0's" stand for observation and the "X" for treatment. In our problem the 0 will represent the administration of the data gathering instrument. The X represents the career education concept teaching. If you read the description by the authors, you can tell that many problems can come up due to the various complications of using this particular design. In this design it should be noted that nowhere is there any indication that any kind of random sampling strategy was used from which to gather data. It may be necessary to use this design, but only if a more appropriate design cannot be located. Let's look at another design.

$$\begin{array}{l} R0_1 \; X \; 0_2 \\ R0_3 \; X \; 0_4 \end{array}$$

This is Campbell and Stanley design number 4. It is a true experimental design. This design controls for about any threat to internal validity which may cause concern to the researcher. Unfortunately as it appears here, we are unable to use this design either: This design suggests the use of a control group which is not possible in our project. By the way, the "R's" in this design indicate that the two groups, experimental and control, were randomly selected from a previously defined population. This is a very good design, but in our specific situation it will not work.

We could go through all the designs in Campbell and Stanley. However, if we did, we would find out that there are no designs which are "tailor made" for our research situation. Therefore, it is necessary to devise a design of our own making to use for gathering data.

Remember our first rule for research was to keep it simple — as simple as possible. I do realize that this design does not account for many of the threats to internal and external validity, but it is tailor made to our situation and needs. Subjects will be randomly selected from the population which was previously defined.

Let's review to this point —

1. Population
2. Sample
3. Design

We have defined our population under study. This is a part of the total student body at Appleton Middle School. We could have selected seventh and ninth graders as well. It was an administrative decision to use eighth graders only. One could assume that around grade eight would be a time when some serious vocational thinking takes place in youth. Since career maturity is a dynamic process there are changes throughout a lifetime. I picked the eighth grade, another grade level could have been picked just as well.

In order to devise the strongest design we could, there was a need to draw a random sample. This random sample will be slightly more problematic than a classroom sample but the results of the analysis will have a wider scope of generalizability – it applies to the entire eighth grade class, not just a single classroom. This means that with this design it will be necessary to draw the sample very early in the school year so that our instrument can be administered when the school year begins (the pretest) and again near the end of the school year (post-test). It will be necessary to remove students from regular classes or collect data after the school day to keep our random sample.

Assume that we decided to use the *Career Maturity Inventory*. This was an administrative decision. We could have chosen the *Assessment of Career Development* as the data gathering instrument. Perhaps you ask the question: Why are you going to use all that money to buy a standardized instrument to gather data? A standardized test is developed by professionals and the items have been screened to provide the most error free data. Compare this to having to write your own test. Your time is much more valuable in terms of project management than instrument development.

In this case we are going to use a standardized instrument. In many other cases, an instrument which meets a particular set of needs cannot be purchased. In that case the project staff, research, or consultants must construct an instrument to gather the necessary data. The greatest potential problem in developing custom instrumentation is that of introducing biases of staff into the structure of the instrument. A question like this: "Career Education is the best way to learn at Appleton Middle School this year, yes or no," is a poor question since it leads the respondent into the "yes" response. It is best to write items with several possible answers. A yes-no question is an all-or-none situation; but, if you gave five possible or ten possible answers, the respondent can be more exact in his response. The result is more accurate data. Another problem of staff constructed instruments is building them to a useable length and number of items. It takes some time to develop a list of questions to solicit responses, while staying away from questions which could be classified as "nice to know." One has a specific research question and should ask only questions which pertain directly to it. It is also necessary to consider the rights and feelings of respondents when constructing questionnaires. Questions of a highly personal nature, for example, should not be asked. If personal questions are asked, the respondent must be informed that, if he chooses, he need not answer those questions. He should also be informed that the instrument will be confidential; none of the responses he makes will be passed among other people.

There are other problems in developing instruments. If you, in constructing an instrument would put yourself in the place of the respondent as you construct items, many of the potential problems can be overcome before you field test your instrument. By the way, it is always considered good practice to try out your "home made" instrument in another school or city to determine if weak points exist. Then you can revise the items prior to instrument use in the research situation.

Consider this information:

Career Maturity Inventory

Data – Instrumentation
Subtests – Self-Appraisal, Occupational Information, Goal Selection, Planning, Problem Solving.

These five subtests on Career Maturity Inventory are also regrouped into two scores: one for an attitude scale and one for a competence test. There are several ways in which we can group the respondent's scores, and there are several research questions which we could pose; all based on our original research question which concerned the effect of implementing the career education concept on students. Before we go into analysis considerations, let's look at a couple of hypotheses which we may choose to study in detail.

Do we want to determine if there is a significant change in pre to post-test scores for the: (1) total instrument? (2) self-appraisal? (3) occupational information? (4) goal selection? (5) planning? (6) problem solving? (7) attitudes? or (8) competence? If we want to study all of these items, it will be necessary to prepare a hypothesis for each statistical analysis we wish to perform. Let's say we, in the overall concept of career education, are trying to emphasize occupational information at the eighth grade level. This being the case, we develop a hypothesis to analyze that point:

HYPOTHESIS:

> There will be a significant difference in the pre-post-test scores of eighth grade students on the occupational information portion of the CMI.

Let's write only one hypothesis for our project:

GLEN OAK HYPOTHESIS

> There will be a significant difference between pre- and post-test scores on students in the eighth grade at Appleton Middle School. *alpha* = .05, one tailed test.

How should the data be analyzed? Remember our design specified the instrument would twice be administered to a random sample of students. According to our hypothesis, we are concerned with the overall CMI score only. If we had other hypothesis, we would be concerned with the other data.

In analyzing you must understand some basic statistical premises and assumptions. Most of the time you can meet the assumption of the "T" and "F" test if you collected interval data from a random sample of about 30 subjects. If you had collected nominal data, you could use the Chi Square statistic. Since we meet the criteria for use of the "T" statistic, we will use it to analyze our data.

RAW DATA PRE-TEST

17	29	12	24
23	44	18	30
19	41	27	29
19	43	32	30
31	32	29	28
37	37	24	16
23	39	32	
13	26	23	

N=30 EX=826 EX^2=24850
S.D.=8.52 X=27.53

This represents the scores obtained from the sample of 30 students on the pretest.

RAW DATA POST-TEST

21	20	29	44	52
39	26	28	55	48
54	24	28	57	42
37	29	32	54	39
39	37	29	39	
43	31	27	45	

N=28 EX=1048 EX^2=42408
S.D.=10.85 X=37.42

These scores represent the post-test scores of the same group of randomly selected students. They are not, nor do they need to be, paired. As you can see, there were only 28 scores the second time the test was administered. It is a common occurrence to have someone who was absent one day, moved from the city, or dropped out of school. This is of little concern in the analysis – unless you lose a sizeable number from the sample.

Since our sample size was 30 and 28, it will be necessary to analyze using the "T" statistic developed for unequal cell (sample) size.

Using this statistic we find that:

$$T = 3.87$$

Now that we have calculated the statistic and T was 3.87, we now look to the level of rejection of the hypothesis at the .05 level. Looking up in the T table in any stat book we find, under $N_1 + N_2 -$ 2 degrees of freedom at the .05 level for a one tailed test to be greater than 1.64. Since our problem had a result of 3.87, we can say that there was a significant difference between the pretest and post-test scores of the eighth grade students at Appleton Middle School as measured by the CMI.

Now that we have very basically covered the methodology of developing research elements, let's attempt to put all this into some sort of logical sequence.

Have you ever gone shopping and, upon arrival at the store, realized that you had forgotten what you went there to get? You might say that you had a slip of the mind. You could also have said "My planning was very poor." With just a little planning, you could have written down what you needed and taken a list with you, saving one trip to the store. In research and development efforts the same type of situations can come up almost every day. This is why we develop an activity network to assist in carrying out any project. Preliminary planning is the most useful tool to determine, within the framework of problem statements to conclusions, when each activity and event should be performed to arrive at the proposed completion date.

Many times the inclusion of an activity chart will point out to project reviewers how the many elements of a project fit together to form a complete effort. It is similar to a jigsaw puzzle – all of the pieces are there but the total picture is not. By programming activities you can easily get the total picture of the proposed project. By constructing your own activities chart you are pre-planning one year's activities. By doing the advance planning you are correcting a very real problem in project work, that of losing sight of what the emphasis of the project is supposed to be.

Let's look at an activities chart for the general operation of a research proposal which is presented at the end of this paper as attachment RMP-1.

This is a general activities chart and could apply to any similar project. Note that numbers in circles refer to information below the chart and they are for starting or completion of events which are elements of the overall project. This chart does not have a time line built into it. We may choose to incorporate a time line on our own research project. In this example, the solid arrows indicate action activities while the dashed arrows indicate dummy or passive activities. Let's construct an activity chart for the project we've been talking about.

The activities chart should be prepared in as great a detail as is appropriate for the project. However, it is most helpful if you show the major elements or blocks of your project and not specific day to day activities. RMP-2 represents the time/work line for the sample project that we've been discussing. This represents only one interpretation of the overall possible activities; your assessment and priorities could well have caused you to indicate other relevant points on the chart. Just for a point of reference, I have also included a general time frame for approximate dates for the completion of and start of several events indicated.

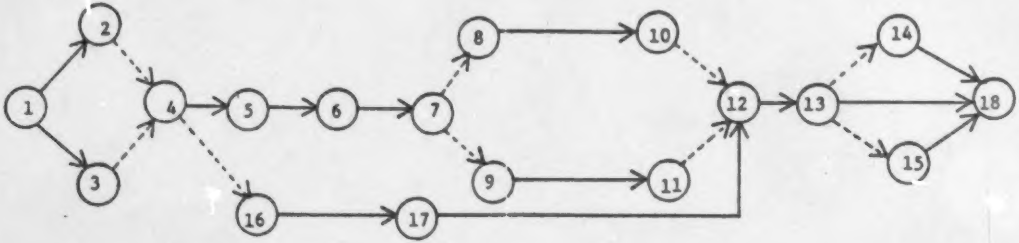
The product of any research project is really the documentation of how the project was completed. Since you started out by stating a problem, the final report should relate to that problem. You did a variety of operations to conclude the project. It is necessary to document the strategies used, the instruments for data collection, and the type of analysis used within the project. This is necessary, not because the funding source requires it, but because other people are likely interested in the same problem area. With good documentation, your results may be applied to similar efforts in other locations. After you have performed the analysis of data, in terms of the previously stated hypotheses, you must determine if your analyses resulted in significant or non-significant differences. It is also your responsibility to draw conclusions. It is always to your advantage to discuss the events or happenings during the project which could have or may have caused what happened. It is always possible that the treatment may be the principal cause of the observed differences which were statistically significant. After discussing the analysis and its significance, you, as project director, must make recommendations for the future of the method and process used in the study. Career education programs could be significant in bringing students closer to realistic vocational choices and in your mind it may merit the recommendation that similar programs be incorporated in all middle schools across the state. However, one must be somewhat conservative in stating recommendations, since one "far out" exuberant statement may cause the report reader to discount the entire study. Since a funding agency put funds into your proposal and project, it is also appropriate to document how the results of this project will be implemented in the overall program of the future.

Let's summarize the total parts of the research methodology or procedure:

1. Population
2. Sample
3. Design
4. Instrumentation
5. Hypothesis
6. Statistical Test
7. Findings
8. Analysis and Report of Findings

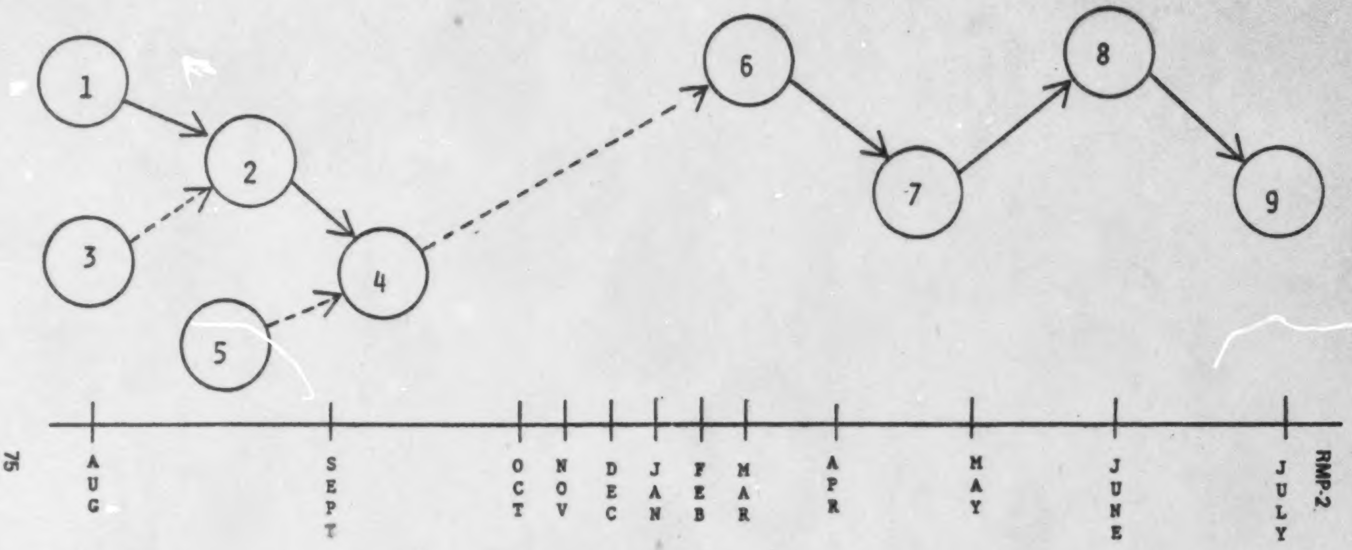
This is the heart of the research project. Even if you are not working on a research project, much of the same information is appropriate. The general project difference would result in a less rigid data analysis and no use of a hypothesis. In any project some sort of a formal evaluation should be undertaken to determine the observed overall effect of the project's intent.

RMP-1



Event Identification

1. Project Start
2. Complete Relevancy Definition
3. Complete Research Definition
4. Start Evaluation Instrument
5. Complete Research Evaluation Instrument Review
6. Complete Abstract and Evaluation Form
7. Complete Initial Bibliography List
8. Start Procurement
9. Start Abstracting
10. Complete Procurement
11. Complete Abstracting
12. Start Abstract Assignment
13. Start Synthesis and Integration
14. Start Recommendations for Future Research
15. Start Annotated Bibliography
16. Start Preliminary Category Development
17. Start Final Category Development
18. Project Complete


1
2
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6
7
8
9
75
AUG
SEPT
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUNE
JULY
RMP-2

1. DEFINE POPULATION
2. ADMINISTER CMI PRE-TEST
3. ORDER TESTING SUPPLIES
4. SCORES RETURNED FROM TESTING/SERVICE
5. CONTRACT STATISTICAL & COMPUTER SERVICE
6. POST TEST ADMINISTERED TO SAMPLE
7. POST TEST SCORES RETURNED FROM SCORING
8. DATA COLLECTION SAMPLE
9. FINAL REPORT COMPLETED

PERSONNEL PLAN

Herbert Bruce

To develop and carry out a successful program of vocational education there must be a concerted effort on the part of all team members. This team should include local, regional, and state personnel. The people involved should be responsible for or interested in providing quality programs of vocational education based on needs and desires of people.

This same principle should apply to writing proposals on the local level. A concerted effort must be made by an appropriate team of people. The team should include the following kinds of people:

- Teachers
- Guidance personnel
- Supervisors
- Lay citizens
- Resource people

This team and other appropriate personnel should probably be engaged in the following activities:

- Determine the need for the project that is to be identified and described in the proposal.
- Based on the identified needs, develop the objectives.
- Determine the procedures to follow for meeting the objectives.
- Identify the tasks to be carried out.
- Select appropriate personnel to carry out the tasks.

In selecting personnel, one should look for people to do specific jobs. If the job to be performed is teaching, select a teacher. If a curriculum specialist is needed, get a person who is a curriculum writer. This same principle applies to other areas as well.

As one can see, it is very important to determine the resources needed for a particular project. Personnel is included in the resources needed, and it is very important to identify appropriate people to assume specific responsibilities.

There are, however, some obvious mistakes made in selecting personnel. A few of the mistakes are listed:

- Using existing personnel who are not qualified for assigned positions
- Allowing people to devote part time to other responsibilities while employed full time with the project
- Stating objectives that conform to the qualifications of a person and not relative to the project

These and many other mistakes should be kept in mind when securing appropriate personnel. Even though a good proposal may be developed, if inappropriate personnel are used, the project will fail.

DISSEMINATION PLAN

E. Norman Sims

Dissemination isn't really a hard term to understand: it is basically communication. Who says what to whom, through which channel, and with what effect.

This process of communication is particularly important to the researcher because the greatest economic waste, at least in terms of program outcome, is unread information and unused innovation. Moreover, the researcher must understand that he faces two psychological barriers: (1) Most audiences just don't want to be communicated with; and (2) Most people feel, as Mark Twain was said to feel about research, "There are lies, there are damn lies, and there are statistics."

The program to overcome these barriers and reach the audience is a two-part job. The Bureau of Vocational Education and the project director both have a role.

The Bureau's role in regard to a specific research and development project, is to send copies of the approved proposal and final report to U.S.O.E. offices in Atlanta and Washington, and to ERIC. The Bureau's Coordinator of Information Dissemination also serves the function of technical consultant for the development of the dissemination plan and its products.

Like almost all administrative activities, dissemination of information is most effective when conducted according to an organized plan. The following contains an outline of a six-step planning process designed to aid project personnel in transmitting information necessary to a project's success, and information about project results or product(s), to the appropriate audiences.

The dissemination plan for research and development projects is generally to be included in the project proposal. Although there may be need for revision and further negotiation and/or approval of specific activities, a plan created early in project development assures among other things: (1) that resources will be allocated for dissemination activities; (2) that a developmental copyright can be obtained when indicated; (3) that information required for reports, brochures, etc. will be collected when it is available; and (4) that communications are timely, well spaced, and lack unnecessary repetitiveness.

The following six-step planning process will hopefully do much to aid project personnel in planning dissemination activities without undue pain.

Step 1: **Identify Target Audiences** – To whom are we talking, or want to talk?

This may be the most straight-forward and, at the same time, most difficult step in the planning process.

For every project there are several individuals or groups who must or should receive information about its activities and findings. The defining of these publics – to whom are we talking or do we want to talk – is the first step toward creation of a viable dissemination plan. Here we attempt to list all special-interest groups whose actions, attitudes, or opinions, affect the project in any way.

Generally a "publics-inventory," would include:

- Students
- Parents
- Teachers
- Administrators

Some of the groups identified by one career education project as those it would contact during its funding life are listed in Figure DP-1.

Obviously, most publics can, and should, be broken down into sub-publics when doing so makes the group easier to research and, ultimately, easier to reach.

As you can see from Figure DP-1, audiences are usually targeted as being within one of three levels: local, state, or federal. Audiences who are directly involved with project activities and those who will primarily be interested in the final results or product(s) are included.

In the dissemination plan, target audience identification and arrangement is primarily dependent on the topic or concern to be dealt with by the project, the prospective product(s) or results, and the project's organizational structure. The size of the audience will, of course, vary from project to project and may force the Project Director to arrange a dissemination plan around different groupings. Each project should, however, carefully analyze its particular situation to determine what groups or individuals will be concerned with its functioning.

After identification of target audiences, it is generally helpful to place them in priority order. If resources are limited, low priority groups may need to be omitted or to be served through communications designed primarily for other audiences. Placing the listing in priority order also prevents a project from conducting activities designed to reach low priority groups first, and then finding that there is no money or time for activities planned for very important targets.

Establishment of priorities will involve different systems depending upon the nature of the project and fund limitations. Five rather simple methods of priority have been utilized by the media in the past with some degree of success. They are:

(1) Concern-Result-Structure Coverage
(2) Total Coverage
(3) Opinion Leaders Hit
(4) Dollar-cost per Target Hit
(5) Dollar-cost per Target Utilization

Concern-Result-Structure Coverage

Earlier we mentioned that target audience identification and arrangement is primarily dependent on the concern dealt with in the study, the prospective results of the project, and the project's structure. Naturally not all targets will be related to a project on all three of these levels, thus priority targets can be determined by observing which of these levels and what identifiers the target is related to. For example, if the project staff believes concern is more important than result, and result more important than structure, these identifiers can be weighed; Concern = 3, Result = 2, Structure = 1. An audience, then, which is related to a project by Concern and Result carries a priority weight of 5, while one related by Result and Structure would carry the lower priority weight of 3.

If we were now to weigh level as State 3, Federal 2, and Local 1; we could develop a priority chart which would look like Figure DP-2. With this matrix, we can get a notion of target audiences priorities for dissemination from this project. Clearly Target C has priority with A and B having equal importance.

Total Coverage

The concept of Total Coverage in a dissemination plan is a simple one and rather self-explanatory. We would give priority to that audience which reaches the largest number of individuals.

While this is a philosophically valid approach, as this would make a project's number one priority audience the students, it is probably the least useful of the five. Most of the problems in dissemination outlined at the beginning of this presentation (poorly allocated resources, poor communicative material, poor collection of necessary information, etc.) is as much a fault of the total coverage orientation as is having no dissemination plan.

Opinion Leaders Hit

Some programs dealing with innovation may find it necessary to aim their results at opinion leaders; those individuals in a target audience who are seen by members of that audience as being "knowledgeable," and are sought after for innovations and information. This approach may be the most advantageous, in that at least one study found opinion leaders to be (1) the group most open to innovation, and (2) the simplest group to contact due to their positions of authority in formal audience structure (see, *Opinion Leaders in the Organization Structure of Two State Divisions of Vocational and Technical Education*; Hull, Russell and Blanton, 1973). As they by nature constitute a relatively small group and are usually visible, this may very well be an excellent dissemination priority approach for some projects.

Dollar-Cost Per Target Hit (DCPTH)

It is unfortunate that budgets must be drawn and held to (how much easier it would be for the project director to be given all of the money he wants!) But, in this day of "belt-tightening," financial considerations become most important. This being the case, dollar-cost per target hit (DCPTH) becomes an important indicator of target priority.

If two audiences (each having 100 members) seem to be likely targets for a dissemination program, yet one can be contacted through a direct mailing with a cost of $50.00 and the other only through a workshop costing $500.00, the first audience is costing the project $.50 per hit while the second is costing $5.00 per hit. Using a cost-benefit basis of comparison, the direct mail audience has priority.

Dollar-Cost Per Target Utilization (DCPTU)

Whenever the DCPTH technique is advanced, someone always thinks, "oh, yeah, but what if the $.50 group is as hard to reach in terms of getting them to use the innovation as they are cheap to contact? Does it do us any good to contact them?" Well, this is clearly the situation in any non-selective dissemination program. For this reason we can determine audience cost in much the same manner as is done in DCPTH by considering the number in this audience we expect will utilize the project results.

We might assume that only 15 percent of the direct-mail group will utilize the results of the project, while 50 percent of the workshop group will utilize the innovation. The workshop group, even though they cost more to reach, is now the priority audience, as the workshop approach is 35 percent more effective in terms of innovation utilization. The DCPTU and DCPTH can be utilized in conjunction and, if the situation allows, this method can reach a "happy medium" between coverage and utilization. Such a situation is, of course, preferable.

As we have previously noted, no two programs are alike. Individual projects must determine what scheme they will follow when forming target priorities. This is not an impossible task, and it is a task which is necessary for an adequate dissemination plan within a restricted budget.

Step 2: Determine What Information Should Be Communicated to Each Target Audience — What do they think? Why? What do they want to know?

In this program of plan development Step 2, asks us to take each of our targeted publics and reach a conclusion as to prevailing attitudes and opinions within that public. In many, and probably most, cases your research findings will be directed toward utilization by only one or two groups. This, of course, significantly decreases the amount of work necessary in assessing opinion; particularly in cases in which the project staff are members of the audience they are trying to reach. Even in such a common situation, it is still necessary for the project director to determine what information is at the disposal of project personnel (or can be developed) which should be transmitted to each audience. Although project personnel, as noted, can often determine the information needs of an audience through their own knowledges or literature review, it is sometimes helpful to go directly to the individual or group concerned via some audience research tool. This technique allows discovery of exactly what the target group would like to receive from the project. The project director can avail himself of many "Do-It-Yourself" nominal-cost, opinion techniques, at least one of which can be fitted into the smallest project budget.

These include:

- Media audits for "what people are saying"
- Random depth interviews
- Low-cost, spot-mail questionnaires
- Regular thought-leader contact
- Incoming mail audits

- Staff opinions and "the educated guess"
- Use of nearby college sociology, psychology, and statistics classes where your research requirements can sometimes be utilized as a class project
- The Coordinator of Information Dissemination in the Research Development Unit who may have audits for your targets which were obtained by past studies

Returning to our career education project example, classroom teachers will probably be an important target for such a project. In this instance, the project director, having worked with teachers before, is aware that they will probably be most interested in curriculum materials, instructional aids, and possible classroom resources. The project staff may also want them to have a sound working knowledge and acceptance of the concept of career education and the classroom approaches involved in implementing it. The staff will want teachers to be aware of events, personnel, and progress within the project, and of any findings resulting from the project.

The question arises, however, as to whether this is all the information the teacher feels he needs or would like to have. As an additional step in their analysis, the project staff could employ an interview or survey to discover what he felt information needs of teachers are.

Finally, a review of materials and information available nationally for that group should indicate any spaces in the store of knowledge or materials which might need to be filled by the project.

For each target audience, a similar analysis can be conducted to determine what needs to be communicated, and the left side of a planning matrix as shown in Figure DP-3 can be completed for each target group.

Step 3: Determine at What Point There Is Likely to be Resistance to What Is Communicated

One intermediate step between identification of what is to be communicated to each target audience, and choice of the activities through which this will be accomplished, is a review of the concepts, information, or appeals which might not be readily accepted by a particular audience. Since these problem areas will need special treatment by those projects whose functioning or success might depend on that acceptance, they should be identified for each target group and the exact nature of the resistance explored.

Going back to our career education project as an example, it is possible that some teachers will resist the entire idea of career education. While there are probably those individuals who will never be convinced, a large percentage of these can mean failure for the project. If the reasons behind the resistance can be identified (feared loss of academic excellence for instance, or a misconception of the project purpose) then communications can be designed to eliminate some of the resistance.

In Figure DP-3, the topic "Career Education Concepts" is starred (*) to indicate the need for special consideration.

This particular step is of prime importance in the successful choice and design of dissemination activities.

Once the extent of resistance in each target is determined, the project director can begin to estimate what degree of utilization and/or target coverage can he realistically expect to achieve. Human nature being what it is, nothing is going to wipe out huge bodies of negative opinion in just a few months. Our dissemination program can only "go-down-in-flames" by hoping to do so.

But a realistic estimate of utilization and coverage, say a 45% figure the first year, might possibly be achieved through a well planned, vigorous communication program. Of course, only experience, with the impact of various communication tools, plus a knowledge of target behavior and interaction, can lend wisdom to this kind of dissemination goal. This experience must be brought to bear since it is at this particular point that our professionality will be most vulnerable and, at the same time, potentially most effective in increasing target coverage and innovation utilization.

If guidelines were to be established for overcoming initial resistance they would probably be:

(1) Invite your audience to participate, if possible, in the project. This may entail just listening intelligently to your audience.

(2) Offer your project results in such a way that they will be perceived as a desirable addition to the audiences' own scene.

(3) Make sure that the information gained from the project is conveniently accessible to those who might decide to use it. This does not mean to have plenty of copies of the final report; it does mean that the project should be placed in such a form that it is understandable, useable, and timely. For dissemination purposes the results of the project should be presented in such a way that overt participation by the targets is both feasible and convenient.

(4) See that the psychological "price" of utilization be perceived as reasonable.

Step 4: Preliminary Choice of Dissemination Activities by Target Group — by what methods, and on what time table, can we help our message to reach the proper audience.

Once the preceding steps are completed, dissemination activities which might best carry the message for a specific target audience can be chosen.

Possibilities for dissemination activities are endless. Just a brief listing would include: publications, reports, or printed materials in a variety of forms; radio, television, or newspapers; hosting of seminars, conferences, and on-site visits or presentation of papers or speeches at similar functions held by professional organizations, the state department, etc.; individual work on a one to one or small group basis; establishment of a speaker program or provision of a slide-tape presentation for use by others; provision of resource centers or information services; etc.

It is the responsibility of each project staff to analyze the nature of their particular project, their audience and its needs, and the information they wish to communicate. Through this analysis they should be able to choose (1) the best communication form in each instance and (2) the number of different communications which must be directed toward an audience to accomplish the desired end.

Dissemination activities which are preliminarily chosen for each target audience can then be recorded on the right of the matrix shown in Figure DP-4 and the intersection of activities and topics scanned to determine any omissions.

At this time the entire set of dissemination activities for each target audience can again be checked for unnecessary duplication and for proper coverage of problem audiences.

The dissemination program of a research project has its management considerations, of course, just as the budget, or personnel, or research have theirs. Unlike some of these other considerations, time tends to take on over-riding importance. In one study of target audience needs (*Interpretation of Target Audience Needs in the Design of Information Dissemination Systems for Vocational-Technical Education*; Magisos, 1971) the researchers found that Currentness rated third on an inventory of "Most Important Characteristics of Information," preceded only by Relevance to the Problem (1) and Speed of Obtaining (2). Moreover, two of the most important target audiences (Teachers and

Counselors) rated it as being second. The dissemination program can run on time if thought is given to its preparation and the disseminator develops his schedule around "backtime." Backtiming is an old concept in the news media where a completion date is set for the final product, in this case maybe a career education 'packet,' and activities are timed back from that date. For example see Figure DP-5.

This is, of course, only an example of a time chart which has been backtimed; not a suggested time schedule. Remember that as dissemination materials and media become more diverse and complex, more time and organization is necessary to manage their scheduling.

Step 5: Final Choice of Dissemination Activities

At this point in the planning process, possible dissemination activities for all target audiences have been chosen. It should be useful before final selection to transfer information from the entire set of preliminary matrices completed for each audience to a total project matrix like the one shown in Figure DP-6. The number of audiences who can be served by a single activity is then easier to determine, as is the possibility for slight alteration of activities planned for several groups in order to serve all of their information needs through one mechanism.

Through this process, for example, the tape-slide presentations called for in the activity lists of several different target audiences might be combined into one. If slightly different concepts must be covered to meet the needs of a particular audience, then the slide set might be divided into replaceable segments. A separate segment dealing with the additional concept could then be developed for insertion in presentations to the audience with the unique need.

Alterations such as this one can often pay good dividends in terms of both money and development time.

Much of the elimination and narrowing of activities will have occurred as the possible dissemination activities for each target audience were chosen. This final examination allows the planner to check the following points:

(1) Are all target audiences adequately covered? Are special needs or resistance areas accounted for?

(2) Is the best possible use made of resources? Could other, less expensive or less time-consuming activities communicate the information just as well?

(3) Does the project have or can it obtain adequate resources in personnel, money, materials, etc., to carry out all of the dissemination activities listed? Can the activities be of sufficiently high quality under existing conditions? If not, what is the best compromise?

(4) Is there adequate repetition or communication to each target group?

(5) Are the dissemination activities sufficiently varied?

The planning process to this point should have yielded a group of target audiences and the best possible set of dissemination activities to meet their information needs. If the first five steps have been correctly carried out, the next step should complete a workable and very useful dissemination effort.

Step 6: Assign Dates for Development, Production, and Presentation of Planned Activities and Staff Responsibility

While this step is largely self-explanatory, it should again be noted that there can be numerous delays in printing, film or slide development, and filming or taping of television and radio shows. Adequate time should be allowed for this kind of problem in your final backtime schedule.

Designation of one or more staff members to be responsible for coordination of a dissemination activity or several activities is a second administrative activity which should be carried out at this time. By centering the major responsibility on one individual, staff time can more easily be scheduled for the dissemination program and activities are more likely to be completed.

If possible, the project director should evaluate the final dissemination effort: did we reach our goal, or did we miss it – by how much? Which of the six steps should be reviewed and how can they be adjusted to reach the goal? It is only with answers to questions such as these can we evaluate our entire dissemination program and develop a clearing house for target audience needs in Kentucky.

Figure DP-1
Target Audiences for the Sample
Career Education Project

National Audiences	State Audiences	Local Audiences
National Center for Occupational Education, Raleigh, N.C.	State School Superintendent	Advisory Committee
	State Legislature	Community Groups
Ohio Center for Vocational/Technical Education	School Board Association	Local School Board
		Chief School Officers
Office of Education	Department of Public Instruction	Teachers
State Research Coordinating Unit Directors		Counselors
State Vocational Directors		Administrators

Figure DP-2

Indicator	Level Local (1)	 State (3)	 Federal (2)	Priority Weight From Matrix
Concern 3	A		C	Target A – 5 Target B – 5 Target C – 8
Result 2		B	C	
Structure 1	A		C	

Figure DP-3

TARGET AUDIENCE: Teachers

INFORMATION NEEDS

DISSEMINATION ACTIVITIES

Curriculum Materials						
Instructional Aids						
Classroom Resources						
*Career Education Concept						
Implementation Strategies						
Project Events						
Project Results						

Figure DP-4

TARGET AUDIENCE: Teachers

INFORMATION NEEDS

	Tape-Slide Presentation	Brochure on Project Structure	Career Education Journal Article & Reprints	Curriculum Units	Bibliography	Closed Circuit T.V. Programs	Newsletter	
Curriculum Materials				x	x			
Instructional Aids			x	x	x			
Classroom Resources			x	x	x			
*Career Education Concepts	x	x	x		x			
Implementation Strategies			x		x	x		
Project Events		x	x				x	
Project Results			x				x	
Information About Other Projects					x			

Figure DP-5

(Want by this date)

June 28	Packet Completed
	↑
	Takes five days to print and five days to make corrections and put together material.
	↑
June 18	Packet to Publisher
	↑
	14 days for final edit of material.
	↑
June 4	Packet material received from staff.
	↑
May 18	Staff begins packet organization.
	↑
May 1	Staff begins packet development.
	↑
April 1	Final report published.

etc.

Figure DP-6
TARGET GROUP AND DISSEMINATION ACTIVITIES FOR EACH GROUP
Sample Career Education Project

			TARGET GROUPS													
DISSEMINATION ACTIVITIES	PROPOSED COMPLETION DATE	ACTUAL COMPLETION DATE	Teachers, Counselors, Administrators	Chief School Officers	Local School Board	Community Groups	Advisory Committee	Department of Public Instruction	School Board Association	State Legislature	State Superintendent	State Vocational Directors	State Research Coordinating Unit Directors	Office of Education	Ohio Center for Vocational-Technical Education	National Center for Occupational Education, Raleigh, North Carolina
Tape/Slide Presentation			•	•	•	•	•	•	•					•		
Brochures			•	•	•	•	•	•	•	•				•		
Career Education Article Reprint			•	•	•	•	•	•	•		•	•	•	•	•	•
Quarterly, Interim and Final Reports				•	•		•	•			•	•	•	•		
Curriculum Units			•	•				•						•	•	•
Bibliography			•	•			•	•						•	•	•
Closed Circuit TV Programs			•	•	•											
Newsletter				•	•		•	•		•		•	•			
On-Site Visits					•	•		•						•		•

EVALUATION

Herbert Bruce

Evaluation is the process of obtaining and providing useful information for making education decisions. The basis for evaluation is that one, on the basis of clearly stated objectives, can determine if the objectives have been reached. Evaluation is also a two dimensional process:

a. Time element
   - Immediate
   - Delayed

b. Source of data or information
   - Reactions
   - Actual results

Need for Evaluation

Programs are evaluated by a wide range of methods; therefore, it is impossible to say there is any one best method. Although the demand for program evaluation is often from an external funding source, the primary beneficiary of an evaluation is the local agency — to improve performance. The information provided by a comprehensive evaluation for the purpose of structuring a program at the level should exceed any requirements of an external agency.

Planning a System of Evaluation

The specifics of evaluation should be developed at the local level as part of the school's efforts to design and operate a career education program unique to their needs. It is not something which can be left until the program is operating before being considered, but must be integrated into the design of the program.

There are at least two important considerations when choosing a system for evaluation:

(1) Is the system appropriate for the situation to be evaluated?

(2) Are the evaluator and others concerned capable of handling the complexities of the system?

One approach to evaluation of career education programs at the junior high level could be centered around obtaining answers to three questions:

(1) To what extent are the components of career education in place and operating?

(2) To what extent do teachers, students, parents, and the business-labor-industry community seem satisfied with career education activities?

(3) To what extent can career education efforts be shown to be related to increase in pupil achievement?

First we need to know something about the nature of the program. We can ask a number of questions such as:

(1) How many teachers have made career education learning packages?

(2) In how many classrooms have such packages been used?

(3) How many field trips have been conducted?

(4) How many parents have been involved in the program?

(5) How many students have been exposed to a general nature of the world of work?

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(6) How many students have been exposed to actual work experience?

(7) How many students have been exposed to systematic instruction in decision making?

(8) What processes seem to work well, and which need further modification?

To answer such questions, obviously, tells us nothing about the quality of the effort or about the results obtained from it. It does define the nature and degree of effort being exerted.

Second, we should develop evaluation approaches aimed at assessing the degree to which career education efforts appear to be meeting with acceptance on the part of teachers, students, parents, and the business-labor-industry community. If such groups are resistive to or even unsupportive of career education concepts, the program will surely fail. Career education is not something that can be effectively forced on any group.

Third, evaluation of career education must include careful attention to questions relating to the effect the career education effort is having on student achievement. One of the most basic assumptions underlying the entire career education movement is that if students can see a relationship between what they are being asked to learn in school and what they might do with it when they leave, they will be motivated to learn more of the academic knowledge teachers are trying to teach. This is an assumption that can and must be tested very early in the operation of a career education program.

Opportunities for using this approach to evaluation are plentiful in most schools. It is rare to find that in a particular school, all teachers of all subjects embrace the career education concept simultaneously and are implementing it into their classrooms. More typically, a few teachers start it while most other teachers continue with their traditional approaches to teaching. In such situations, we

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often find easy and natural ways of comparing these two approaches to helping students learn academic content. Many schools administer standardized achievement measures routinely to all students. In such schools, the possibilities of a "before and after" approach to evaluating the effectiveness of a career education effort clearly exists.

Since the program objectives will determine to a large extent the evaluation that is conducted, time and energy spent in their careful construction will make the job of evaluation much easier and more meaningful. Scriven* has defined evaluation as attempting to answer certain types of questions about various educational processes, programs, and the like. In the diagram presented previously, there was a reference to criterion questions. These questions, related to the objectives, provide the foundation on which the evaluation design is based.

Collecting Data

A formal document should be made of the criterion questions, along with all appropriate information relative to what data will be collected for each question, by whom it will be collected, and when it will be collected.

The collection of data and its subsequent treatment can be classified into two major activities. The first is the monitoring of the project as it is implemented. The second is measurement of attainment before, after and as many times as necessary during the project. These two activities are sometimes referred to as formative and summative evaluation. They are also referred to as process and product evaluation.

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*Scriven, Michael. "The Methodology of Evaluation." *Perspectives of Curriculum Evaluation*. AERA Monograph Series on Curriculum Evaluation. Edited by Ralph W. Tyler, et al. Chicago: Rand McNally and Company, 1967.

Process or formative evaluation is explained as providing periodic feedback to persons responsible for implementing plans and procedures. It has three major objectives: (1) to detect or predict defects in the procedural design or its implementation during the implementation stages (2) to provide information for programmed decisions and (3) to maintain a record of procedure as it occurs.

Process evaluation has two qualities which make it well worth the effort. It demands that the evaluator become well informed with the functioning of the program and the complex interrelatedness of the many variables involved. Second, information provided from periodic observations serves to alert management to any design-implementation discrepancies.

Product or summative evaluation measures and interprets attainments at the end of the project cycle and as often as necessary during the project term.

There are many types of data that can be collected and different methods of collecting them. One of the more obvious methods of data collection is researching the school files and records. Some of the types of data which can be obtained by searching existing records are:

(1) Student demographic data including birthdate, grade point average, attendance, address, and test scores:

(2) Teacher demographic data including years of experience, major and minor field, and degrees held:

(3) School demographic data including enrollment by grade, by section, average daily attendance, and schedule of classes.

Another widely used method for obtaining evaluative data is individual and group testing. The Mental Measurements Yearbook is the most well known source of the various commercial tests that are presently available.

Other methods for collecting data for evaluation purposes are questionnaires and interviews. These can vary from open-ended to closed-form instruments. The closed-form instrument is advised when categorized data is needed. The open-ended instrument is best suited for preliminary exploration of untried situation.

A fourth method that might be used is direct observation. Although this method is very time consuming, much valuable information can be obtained from it. The teacher in the classroom being observed will appreciate knowing what the observer is doing. Results of observations can be discussed with teachers; and if observations are to be maintained over a period of time, better rapport will result. There is a danger of biasing the situation by telling the teacher what is being observed, but experience has shown that when classroom activities are being periodically observed, teachers tend to ignore the observer.

Regardless of the method used for collecting evaluative data, there are different means of collecting it. It can be collected by teachers, by students, and/or by the evaluator.

In the case of projects funded by external sources such as federal funds, the use of a third party evaluator is usually required. Just as with the internal evaluation, the method used for the third party evaluation should be one which will measure the effectiveness of the program or project and determine the extent to which the objectives are accomplished. If at all possible, the third party evaluator should be identified in the initial stages of project development.

DEVELOPING THE BUDGET

B. Glen Davis

Administrators will generally agree that the budget is one of the most important, if not the most important aspect of any operation.

The specific procedures involved in the preparation of a budget for a governmental unit are commonly prescribed by state statute, local charter, or ordinance. The procedure you should follow in developing a budget to be submitted with a proposal to any agency will be governed by the standards and procedures under which the particular funding agency operates. As you would expect, under these circumstances, there exists a wide variety of prescribed procedural steps, forms, etc. One should obtain a copy of the particular agency budget specifications to which he or she plans to submit a proposal.

A budget submitted with a proposal could be defined as "a plan of financial operation embodying an estimate of proposed expenditures for a given period or purpose."

The objective of a budget is to provide an orderly plan for future operations as outlined in the proposal. It is extremely important that you keep this in mind.

It is in the control area that the colossal mistakes of budgeting are often made. It is here that the amateurs have censured their subordinates for exceeding budgets, without realizing that they themselves were often to blame for inadequate training. There are many wrong ways to exercise budget control. There is only one right way. Therefore, this control should be taken into consideration when submitting a budget with a proposal.

Control might be quickly and simply defined as a disciplined effort to follow a plan or explain deviations from it.

It is, of course, at the point of deviation from the budget that most human problems are born. This is, by design, the central point in the entire system – the moment which demands explanation, instruction, decision, argument, or even discipline, as the case warrants -- the flash point for management in action.

Below is a summary of principles to be considered by any management wishing to establish its budget practice on a sound foundation.[1]

1. Establish your budget system on the highest possible level of motivation. To be specific, this means using it as a means for setting standards of performance, for measuring actual results, and for guiding management to satisfactory achievement. It means rejecting the use of budgets primarily as a pressure device to goad people into greater efforts. Accept this as a part of the philosophy of your company. Think about it, talk about it, make it a reality. And give more than lip service, even if it is difficult at first to separate the two conflicting motives. A budget program cannot be advanced to the stage of maximum fruition without this step.

2. Anchor your budgeting firmly in a foundation of company planning. Do not permit it to float unattached – a technique without a clearly thought-out reason for being. The budget is not the plan; it is merely the statement of the plan in the language of figures. First turn the thinking of your organization to basic planning; then ask your people to prepare budgets to effectuate their plans. Plan sales by markets and products, plan development, plan methods of manufacturing, purchasing, and merchandising. Determine the performance required of each department of the business; then budgets become simply the standard

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[1] *Cost Accounting, Budgeting, and Control*, W. E. Thomas, Ed. "The Budget Comes of Age" pp. 162-163, by J. L. Pierce.

of dollars needed to do the job. This is the approach that makes managers out of men.

3. Establish the meaning of control, and then put it into practice. In particular this requires the manager of each department to establish his own budget, based on his understanding of the job to be done. Top management may not be able to approve as high a figure as he asks for, but it can reach agreement with him as to what he is expected to accomplish and what it will cost. Having done this, he is responsible for planned performance. If he finds it necessary to exceed the budget, he should discuss this action with his superior and ask for advance approval. A budget is neither to be considered sacred nor to be taken lightly. Managers will respond with better attitudes when they understand that the use of the budget is to permit them to control their own operations.

4. Insist on a clear-cut organization structure. A budget system cannot thrive without it. Each department should have a responsible manager, vested with authority commensurate with his responsibilities. He should have a clear understanding both as to the individual to whom he reports and as to the people who report to him. These are well-known precepts. A searching organization audit may be needed to determine whether they are being followed. The limitations on budget success are precisely marked by the degree of organization soundness.

5. Arrange for good, common-sense accounting and complete, simple, and prompt explanations of the content of the items. This requires an accounting staff that is more concerned with the operating facts than with the techniques of balancing the books. Extreme care should be devoted to seeing that no supervisor has in his budget any item over which he does not have control. This area is fraught with debatable items and unending technical

complications. If your house is not in order in this respect, almost any amount of effort is justified to put it in shape. And unless you are the exception to the rule, it will cost more money initially than you expect to pay, in terms of staff salaries and, perhaps, outside consulting services. The cost is usually well justified, however, in the end result.

6. In the field of cost control, use your budget as a tool to be placed in your foremen's hands – not as a club to be held over their heads. To implement this rule, it may be a good idea to design an education program. Meetings attended by line and staff supervisors may prove an effective vehicle. Cost reduction must be placed on the basis of mutual effort toward a common aim. The creation of this atmosphere is an essential, definitive step in budget practice.

7. Insure the active participation of top management. The budget program cannot succeed otherwise. The way of going about this step depends on your organizational status. If you are the president and question how well you measure up to this requirement, examine your thinking critically and ascertain which of the points in this article, if any, arouse resistance in your thoughts. Discussion with a controller other than your own may afford a fresh view. In any case, set aside the time to explore and understand the subject fully and to practice budgetary control in your daily affairs. If, however, you are a controller, your course in enlisting top-management support is one of patient, untiring teaching, until your case is won and the planning and control idea is in the warp and woof of your company's thinking.

8. See that the controller and his staff express the correct attitude for the responsibility they undertake with respect to budgets. It is the controller's job to establish, maintain, and coordinate a budgetary system, in fact, a complete

system of planning and control. But this work must be accomplished through authorized management. He must not enforce his instructions nor issue orders. He and his staff must be devoted to producing, reporting, and interpreting information — to making the planning and control machinery run. He is wholly a staff executive, and his only honors stem from the confidence of his associates. This he earns by honestly providing the control service and refraining from making operating decisions. Perhaps the cultivation of this attitude is the most productive single step of all, because from it the impetus to take the other steps may flow.

PROPOSAL SUBMISSION AND REVIEW

Taken from the
Guide to Writing Proposals, Progress and Final Reports

Proposals should be double spaced and typewritten on one side of standard (8½ x 11) paper, stapled at the left margin. Do not bind or enclose in folders.

Address

The address label should read:

Director, Supporting Services Division
Bureau of Vocational Education
State Department of Education
Capital Plaza Tower
Frankfort, Kentucky 40601

Number of Copies

Send seven (7) copies of the proposal, two (2) with original signatures.

Review Committee

All proposals submitted to the Bureau of Vocational Education will be reviewed by a committee made up of individuals from within the Bureau and other appropriate individuals outside the Bureau, and in some instances, outside the State Department of Education as deemed necessary.

This committee will make recommendations to the Assistant State Superintendent of Public Instruction for Vocational Education concerning the disposition of the proposal.

Procedures for Funding

The submission of a completed proposal constitutes formal application for support of projects in vocational education.

The Assistant State Superintendent of Public Instruction for Vocational Education shall have final approval on all proposals for which vocational education funds are requested. This decision may be based on recommendations made by the staff in the Bureau of Vocational Education and appropriate advisory committees.

It is the goal of this process to notify the applicant of approval, disapproval, deferral, or need for modification of his/her proposal within thirty (30) days after date of submission. Deferral or disapproval of a proposal will not preclude its reconsideration or resubmission at a later time or to another agency.

Criteria for Evaluating Proposals

The following criteria are intended to provide the prospective proposal writer a guide for developing proposals which will make a significant contribution to vocational education. The criteria are listed so the proposal writer will know the standards upon which his/her proposal will be evaluated:

		Maximum Assessment Rating
1.	Rationale for Proposal: Does the rational provide an adequate background/statement of the problem, and and adequate review of pertinent literature, and its potential contribution to education?	5 pts
2.	Objectives: Are the objectives specific, measurable, concrete, achievable, and relevant?	20 pts
3.	Methodology and Design: How adequate is the organizational design or plan developed; including the setting and the participants?	20 pts
4.	Project Management: Does the proposal adequately develop the management plan, time schedule, and accounting system?	20 pts
5.	Dissemination Plan: Does the proposal present an adequate dissemination plan: operational/terminal?	10 pts
6.	Evaluation Plan: Does the evaluation relate to the objectives, the processes, and the products?	10 pts
7.	Personnel: Do the personnel involved possess the experience/qualification desired?	5 pts

		Maximum Assessment Rating
8.	Facilities and Equipment: Does the proposal adequately identify and justify special facilities or equipment?	5 pts
9.	Budget: Does the budget adequately present and justify expenditures for the proposed objectives and outcomes?	5 pts
	TOTAL	100 pts

PREPARING PROGRESS REPORTS AND FINAL REPORTS

Lou Perry

The reporting system for research and development activities requires the documentation of project activities through Progress and Final reports. These reports have various functions: (1) they serve to disseminate new educational discoveries and techniques; (2) they describe the research and development activities or materials produced; (3) they give an account of results and an evaluation of the finished project; and (4) they are a requirement for final payment and serve as a means of monitoring the progress being made as compared to the proposed project goals and objectives.

Progress Reports

As the name implies, this document communicates the progress being made over a period of time . . . usually every three (3) months. The main content of the Progress Report should reflect the major activities, accomplishments, and/or events that relate to the achievement of proposed goals and objectives for that particular time period. In doing this, the project director orients the reader (the program monitor and significant others) to the identified problem, methods, results, conclusions, and recommendations for that particular time period. Moreover, the monitoring between the participating agencies coupled with communicating the related events and activities becomes an important function of the Progress Report.

The research and development activities within the program are transmitted through dissemination activities. The planned efforts for the dissemination of information may include such items as: articles, photographs, brochures, newsletters, and/or addresses and public relations activities. Upon approval of a proposed program, project personnel should secure "Guidelines for Development Of A Project Dissemination Program." Earlier discussion in this document more fully develops the "Dissemination Plan."

The basis for research and development activities is to apply or demonstrate potential ideas for possible program development. To document such an effort requires a systematic program of data collection. This involves an approved application of the appropriate forms and techniques which will result in the gathering of the desired data. The development and presentation of this information in the Progress Report should include:

A. forms for collecting data,

B. types of groups (experimental/controlled),

C. methods of analysis,

D. design or procedure, and

E. significant findings and interpretations.

While the approved proposal of planned activities are clearly identified and agreed upon by the participating agencies, there may develop a certain degree of unexpected events or problems throughout the progress of the project. Therefore, the reporting system should include these unexpected events which, as examples, might include:

A. time . . . a major event effected by the cancellation of school.

B. activity . . . a revision in a major event created by a shortage of resources.

C. personnel change . . . an unanticipated staff exchange or perhaps re-assignment of staff utilization or responsibilities. Staff additions, departures, or revisions of time might also create unexpected events.

Although a Progress Report presents the events for a particular time period (quarterly), there is a need to develop a bridge between one quarter and the next. Therefore, the Progress Report should give a brief description of future activities planned for the next reporting period.

With the implementation of the research and development activities, the program administration or events may require certain equipment. Approved capital equipment acquistions should be identified according to:

A. necessary equipment as identified in the proposed plan.

B. state regulations for procedures in the acquistion of equipment.

C. proper tagging of equipment and completion of an "Equipment Control Card."

In summary, and as a means for organization, the Progress Report includes:

A. Cover Sheet

B. Content

   1. Describe the major activities and accomplishments during reporting period.

   2. Identify significant findings and events.

   3. Summarize the dissemination activities.

   4. Describe data and and information gathering.

   5. Describe departures from the original plan.

   6. Describe special problems encountered or expected.

   7. Identify and describe changes in staff personnel.

   8. Describe future activities planned for the next reporting period.

   9. Report capital equipment acquisition.

Final Report

The Final Report much like the Progress Report should describe the research and development activities, the materials produced, give an account of results, and an evaluation of the finished project. The difference, of course, is the reporting period: the Progress Report is quarterly while the Final Report covers the major events/activities over the duration of the project.

The general submission requirements for Progress Reports include:

A. number of copies . . . five (5).

B. recipient . . . project monitor.

C. purpose . . . a means to communicate program events and to furnish State program staff with information to monitor the progress of the program.

Progress Report: Cover Sheet which identifies:

A. type of report (i.e. Progress Report)

B. assigned project and fiscal numbers

C. title of project

D. project director

E. agency or institution

F. reporting period

G. date submitted

H. disclaimer:

The statements or contents of this report do not necessarily reflect the views or policies of the Bureau of Vocational Education, State Department of Education, Commonwealth of Kentucky.

Preparing the Reports

The Final Report communicates the results of the research and development efforts, serves a monitoring function, and assists in the determination of the fulfillment of the proposed contract or grant. Moreover, an approved Final Report is required before final payment is transmitted from most funding agencies. While the responsibility for content rests with the project director or investigator, the participating agencies should work cooperatively in its development to prevent problems which might arise. An informal submission of a draft for review by the project director monitor is a recommended procedure. Releases to the press should not be made until the report has been accepted.

If results appear to be valid and reliable and presented through quality efforts, the report may be widely disseminated . . . points which should be considered in the planning and preparation of the report. The form of disseminating the report may include press releases, other mass media, and/or special publications.

Consideration should be given to the use of documents in the report. Personal documents should not be used unless prior approval has been secured, and copyrighted materials should not appear without written permission. These materials should be identified in the following manner:

Reprinted from ______________________________
(title of copyrighted work)

by ______________________________
(name of author)

by permission of ______________________________
(name of copyright owner)

copyrighted ______________________________
(date)

Individuals responsible for the development of reports should maintain high professional standards of good writing and be consistent in format and content.

Organization of Report

Most reports should be organized into the following:

- A. Preliminary pages,
- B. Introductory section,
- C. Findings and analysis,
- D. Conclusions and Recommendations, and
- E. Supplementary and appendix materials.

The following is a suggested outline for the Final Report:

- A. Preliminary
  - 1. Cover page of Final Report should include:
    - a. Project Number
    - b. Fiscal Number
    - c. Title of Project
    - d. Author
    - e. Project Director
    - f. Date Transmitted
      (See The Bureau's *Guide for Writing Proposals, Progress and Final Reports* for the correct form to use)
  - 2. Title Page of Final Report should include:
    - a. Project Number

  - b. Fiscal Number
  - c. Title of Project
  - d. Project Director
  - e. Author
  - f. Agency or Institution
  - g. Disclaimer

- 3. Contents Page

  - a. Major sections should include:

    - (1) Summary
    - (2) Introduction
    - (3) Findings
    - (4) Glossary
    - (5) Others (titles of parts or sections used)

- 4. Preface or acknowledgements should be included if appropriate.

B. Introductory Section

- 1. Summary to include:

  - a. Brief description of the problem
  - b. Scope of the study
  - c. Objectives
  - d. Methods used
  - e. Results obtained
  - f. Highlights of findings
  - g. Significance and implications
  - h. Recommendations

- 2. Introduction

  - a. Orient the reader--background for the study

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      b. Review related research
      c. *Describe the scope of the report*
      d. State the hypotheses
      e. Define limits
      f. Present the significance and objectives

   3. Methods

      a. Tell how research was carried out

C. Findings and Analysis

   1. Describe findings
   2.
   2. Organize in a logical order

D. Conclusions and Recommendations

   1. Highlight what was accomplished

   2. Highlight what was not accomplished

   3. Write recommendations clearly

      a. Use of results
      b. Need for further research

E. Supplementary Materials

   1. References and Bibliography

   2. Glossary

   3. Appendixes

      a. Materials to include:

(1) Calculation samples
(2) Course outlines or units
(3) Descriptions of rejected research
(4) Tables
(5) Tests
(6) Any others

Specifications

While maintaining high professional standards of good writing, certain specifications should be followed, these include:

A. report size . . . 8½" x 11"

B. typing . . .

  1. All copies (one "camera ready" copy is required) should be a typed original.

  2. Carbon or ditto copies not acceptable.

  3. The left margins should be 1½", all other margins should be at least 1".

Other suggestions that may be helpful to include:

A. use of a good grade of paper,

B. reproduction on both sides of the paper,

C. numbering of pages,

D. secure binding of the report, and

E. numbering of all tables, charts, and graphs.

NOTE: Please check the Bureau of Vocational Education's new *Guide to Writing Proposals, Progress and Final Reports* for an update on this information. Editors.

PROJECT MANAGMENT

Robert Schneider

The key to successful project management is to have a well developed project plan or, in education terminology, a proposal. Unfortunately many proposals are developed within a restricted time frame, by individuals with limited proposal development experience and without supplementary pay or released time for the proposal development activities. This frequently produces a proposal that consists of little more than a guideline.

When a proposal of this form is funded it forces the project manager to make major decisions under pressure without being able to give adequate consideration to future implications. Decisions made under pressure are seldom as wise as those made in a more desirable setting.

However, no matter how well a proposal is thought through and developed, the project director must be continually aware of the progress, problems and alternatives necessary to successfully complete the project.

A project director must continually attempt to produce the highest level of performance possible within the limitation of the resources. The major resources in educational projects are time and money.

One method of attempting to identify the role of a project director or the responsibilities of project management is to study the life cycle of a project and to identify the phases of such a project. From these it is possilbe to determine many of the tasks of successful project management.

Life Cycle of a Research or Demonstration Project

Phase I – Project Planning

The first phase of any research or development project is the planning phase. As discussed earlier, this phase consists of identifying an idea, problem or need; refining it to a greater degree of specificity; determining procedures and techniques to overcome the problem; and then placing these thoughts onto paper in an organized form. This is the proposal or a blueprint for action. Once funded, a proposal becomes a contract and must be followed very closely unless deviations are approved by the funding agency.

Phase II – Project Start-Up

Ideally, there should be a period of time between the notification of project approval and the actual starting date of the project. Frequently this does not exist and valuable project time is devoted to activities that should be completed prior to actual project operation.

A. Personnel Needs

Although it is expected that the proposal was rather specific in describing the personnel needs it is unlikely that a project staff can be ready to start operation immediately upon funding notice. If presently employed staff are to be used in the project, care must be exercised to make sure duties and responsibilities for the project are not "add-on" to present activities. Such a system severely handicaps the possibility of success for the project.

If new staff members are to be employed, these individuals must be fully knowledgeable of their duties, responsibilities and to whom they are responsible. It is also important that a complete understanding be made concerning the permanency of any new positions. Because of the lack of permanency of some funded projects, many agencies prefer to fill project positions with staff currently on the payroll. While this may overcome the concern for permanency, it may also develop into an "add-on" condition mentioned earlier. This approach may also lead to a conflict in the mind of the project person. While he has allegiance to the new project, he also must retain certain allegiance to his former position as he may be expected to return to this former position upon completion of the special funded project.

B. Facilities and Space

One consideration that is frequently overlooked in the proposal development stage is the need for office space, telephones, or extensions, storage space or facility requirements. Although this may appear insignificant in the planning stage it becomes crucial in the project start-up phase. Inadequate office and working space for staff members can have a very adverse effect on project staff morale and ultimately affect the success of the project.

Some funding agencies will not allow for payment of office space, heating, lighting and other indirect costs. The responsibility for these expense items should be clearly specified in the project proposal.

C. Materials

Many educational research projects call for special batteries of tests, reference materials and other items that must be available at a predetermined time but may take several weeks to obtain. Immediately following project approval, the project director should determine these needs and take the necessary steps to assure that these will be available when needed.

D. Equipment

Many funding agencies are reluctant to purchase capital equipment but will approve a rental program. Normally, this point is cleared in the planning or proposal development stages. However, one step that is frequently overlooked is the disposal of equipment following the termination of the project. If this has not been clearly defined in the planning phase, it should be settled in the project start-up phase. If items of equipment are to be purchased, the project director must not only make sure the equipment is ordered early enough to assure availability when needed but also establish an identification and inventory system for this equipment. Most projects are subject to an audit for several years following termination and, therefore, a system of identification of equipment is essential.

E. Special Needs

The project start-up phase is the ideal time for the project director to identify and schedule other special needs. Consultants, if used, frequently need to be scheduled several months in advance. Computer time may also need advance planning.

The key role of the project director during this project start-up phase is to make sure all resources will be available in the right quantities at the right time.

Phase III – Project Operation

While the project operation phase will normally be the longest of the project phases being discussed, it need not be a difficult phase for the project manager. A well written proposal and a keen sense are two important ingredients during this phase.

A. Reporting System

Most funding agencies are rather specific concerning the requirements of monthly, quarterly, annual or final reports. The project manager must see to it that these schedules are rigidly adhered to. If a particular date cannot be met, it is important that the project director consult with the funding agency and arrive at alternatives.

While reports to the funding agency may be rather specific, reporting among staff within the project is frequently less well planned. Informal discussions over cups of coffee are valuable but do not replace formal reports by all staff members. The project director needs to schedule regular conferences with all staff members and maintain a file of written reports concerning these conferences.

Financial records and reports are part of a good reporting system. Most projects are funded for a specific budget and it is important that the project director maintain a system of accurate and current fiscal accounting. Some project monitors maintain that the quality of fiscal accounting is an indication of the quality of project management.

B. Problem Identification and Solving

While most project problems can be traced to poor planning, a project proposal can be expected to be so detailed and accurate that no problem will arise or need for changes will develop. However, under most circumstances, the sooner the problem is identified, the easier it will be to correct. The project director must continually be on the lookout for problems or the need for changes in the project plan.

The project director must also be alert for possible changes in the project plan that may save time, money or produce a superior final product. It is not unrealistic to assume that such changes will be identified by the project staff as the project progresses. Funding agencies are quite receptive to such changes. While additional funding may be difficult to obtain, transferring of items within the budget is not uncommon.

C. Documentation of Changes

While changes in strategies or budgets are common, it is extremely important for all changes to be approved by the funding agency and that these changes be fully documented.

In some instances it becomes obvious as the project progresses that a significant portion of the budget will remain unspent at the termination of the project. When such a circumstance does develop, it is desirable to inform the funding agency. These funds may then be made available for another project. Caution must be exercised to make sure these are truly excess funds. However, bear in mind that your project may have been funded due to the diligence of another project director returning unspent funds.

Phase IV – Project Termination

While the planning, start-up and operation phases receive considerable attention, little attention has been given to the termination phase of the project. Final reports may be submitted but certain other activities may be neglected.

A. Completion of Final Reports

As mentioned earlier, most funding agencies have rather specific instructions concerning the format of the final report, the number of copies and to whom these are to be submitted. Some agencies have rather specific instructions concerning copyrights and ownership of final products. These instructions should be studied. While the content of the final report is most important, the quality of typing and reproduction is a reflection upon project staff and therefore must be carefully controlled.

B. Disposal of Equipment and Unused Materials

A properly developed proposal will include plans for the disposal of equipment, unused materials and other items such as survey forms or used tests and these plans should be followed. However, it is possible that certain items exist that were not accounted for in the original proposal. The funding agency should be consulted and disposal plans developed and documented.

C. Relocation of Staff

One of the problems inherent with specially funded projects is the lack of permanency of staff. As the project nears termination the project director should take whatever steps possible to assist staff in obtaining further employment as restless staff can hinder the final phase of a project. If staff have been shifted to this project from within the organization, it may be relatively easy for them to return to their original position. If project staff are to be terminated, it is possible that they may be able to secure additional funding through a project that continues certain activities associated to the project being terminated.

Many organizations have used funded projects as a sourcd for many of their permanent staff. An individual that has performed well in a special project will likely perform in a similar fashion in a permanent position. This opportunity should not be overlooked.

D. Closing of Accounts

The completion of the fiscal aspects of a project is important. The project director must make sure all claims have been processed as it may be impossible for the funding agency to honor claims received after the termination of the project. While delayed claims such as printing of the final report, outstanding invoices or similar items may be legitimate expenses and can normally be accommodated, it is the responsibility of the project director to consult the funding agency and make appropriate arrangements.

The project director should also make arrangements for the filing and storage of project information. The length of period that files must be retained for audit purposes varies from agency to agency and the project director will need to obtain this information.

E. Related Projects

Most research and development projects uncover other avenues that should be explored. While this information is normally included in the final report it also serves as an ideal starting point for new projects. Project staff, if interested, may capitalize on this information and thus overcome some of the lack of permanency inherent to funded projects.

Good management is essential to the success of any research or development project and advanced planning is one of the crucial elements to good management. However, effective management requires time and support. The project manager, as well as his superior, must recognize the time consuming demands of project management and plan accordingly. While support of project staff is important to the project manager, he must also have the support of the organization within which he works if the project is to produce its maximum potential.

CHAPTER IV EVALUATION

Three techniques were used to evaluate the workshops. These evaluation procedures were used to aid in making needed adjustments in the program while the workshops were in session and to determine the effectiveness of the workshops at their conclusion. The three techniques used in evaluating the workshops were: interpreters; the use of "Participant Evaluation of Presentation;" and the administration of a workshop evaluation scale.

Use of Interpreters

Four to six workshop participants were chosen by the workshop staff at each workshop. These interpreters were considered to be representative of the different professional backgrounds and positions of the total group of participants attending the workshop. They were also judged capable of grasping the significance of evaluative types of comments made by the workshop participants. The interpreters usually met once a day with the workshop staff to provide feedback regarding changes that should be made in the workshop. Several adjustments of time schedules, organization within small groups, and opportunity for interaction of participants were made at the suggestion of the interpreters.

Participant Evaluation of Presentation

Following each major workshop presentation the participants were asked to complete an evaluation instrument concerning the presentation. A copy of the evaluation instrument is in Appendix B. These evaluation instruments were used by the major presenters and they were not summarized or analyzed by the project staff.

Workshop Evaluation Scale

At the conclusion of each workshop the participants were asked to complete an instrument designed to assess the complete workshop. A copy of the instrument can be found in Appendix C.

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The results of the participation evaluation of the workshops are revealed in Tables 4-1 and 4-2.

PARTICIPANT EVALUATION OF WORKSHOP ON PREPARING RESEARCH PROPOSALS AND WRITING REPORTS

July 21-24, 1974
Hospitality Inn

Lexington

The participants responded to the following statements by circling one of the following numbers:

5 = Strongly Agree
4 = Agree
3 = Undecided
2 = Disagree
1 = Strongly Disagree

Statements:

1.	The purposes of this workshop were clear to me	4.58	4.56
2.	The objectives of this workshop were not realistic	1.65	1.64
3.	Specific purposes made it easy to work efficiently	3.97	4.13
4.	The participants accepted the purposes of this workshop	4.16	4.25

5 = SA 4 = A 3 = U 2 = D 1 = SD

5.	The objectives of this workshop were not the same as my objectives	1.84	1.88
6.	I didn't learn anything new	1.42	1.46
7.	The material presented was valuable to me	4.26	4.42
8.	I could have learned as much as reading a book	1.68	1.76
9.	Possible solutions to my problems were considered	4.10	4.13
10.	The information presented was too elementary	1.71	1.72
11.	The speakers really knew their subjects	5.00	4.48
12.	The small group leaders were not well prepared	1.77	1.67
13.	I was stimulated to think objectively about the topics presented	4.68	4.46
14.	New acquaintances were made which will help in my future work	4.13	4.11
15.	We worked together as a group	4.16	4.34
16.	We did not relate theory to practice	1.84	1.86
17.	The sessions followed a logical pattern	4.19	4.24
18.	The schedule was too fixed	2.06	2.05

5 = SA 4 = A 3 = U 2 = D 1 = SD

19.	The group discussions were excellent	4.06	4.09
20.	There was very little time for informal conversation	1.87	1.94
21.	I did not have an opportunity to express my ideas	1.84	1.80
22.	I really felt a part of this group	4.26	4.31
23.	My time was well spent	4.10	4.31
24.	The program met my expectations	4.16	4.22
25.	I have no guide for future action	1.63	1.68
26.	Too much time was devoted to trivial matters	1.48	1.62
27.	The information presented was too advanced	1.63	1.74
28.	The content presented was not applicable to occupational programs	1.74	1.75
29.	Workshops of this nature should be offered again in future years	4.55	4.56
30.	Workshops such as this will contribute little to my work	1.65	1.75
31.	The references available to participants were not appropriate	1.71	1.74

TABLE 4-1
PARTICIPANT EVALUATION OF WORKSHOPS ON PREPARING RESEARCH PROPOSALS AND WRITING REPORTS

	Statements	Mean Score*
1.	The purposes of this workshop were clear to me	4.37
2.	The objectives of this workshop were not realistic	1.76
3.	Specific purposes made it easy to work efficiently	4.08
4.	The participants accepted the purposes of this workshop	4.16
5.	The objectives of this workshop were not the same as my objectives	1.92
6.	I didn't learn anything new	1.64
7.	The material presented was valuable to me	4.28
8.	I could have learned as much by reading a book	1.84
9.	Possible solutions to my problems were considered	4.08
10.	The information presented was too elementary	1.81
11.	The speakers really knew their subjects	4.32
12.	The small group leaders were not well prepared	1.77
13.	I was stimulated to think objectively about the topics presented	4.30
14.	New acquaintances were made which will help in my future work	4.07
15.	We worked together as a group	4.22
16.	We did not relate theory to practice	1.90

*Combined for the three workshops. The participants responded to the statements according to the following scale: 5 = strongly agree, 4 = agree, 3 = undecided, 2 = disagree, 1 = strongly disagree.

TABLE 4-1
PARTICIPANT EVALUATION OF WORKSHOPS ON PREPARING RESEARCH PROPOSALS AND WRITING REPORTS

	Statements	Mean Score*
17.	The sessions followed a logical pattern	4.15
18.	The schedule was too fixed	2.03
19.	The group discussions were excellent	4.06
20.	There was very little time for informal conversation	1.95
21.	I did not have an opportunity to express my ideas	1.86
22.	I really felt a part of this group	4.20
23.	My time was well spent	4.20
24.	The program met my expectations	4.14
25.	I have no guide for future action	1.78
26.	Too much time was devoted to trivial matters	1.74
27.	The information presented was too advanced	1.82
28.	The content presented was not applicable to occupational programs	1.83
29.	Workshops of this nature should be offered again in future years	4.37
30.	Workshops such as this will contribute little to my work	1.83
31.	The references available to participants were not appropriate	1.82

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*Combined for the three workshops. The participants responded to the statements according to the following scale: 5 = strongly agree, 4 = agree, 3 = undecided, 2 = disagree, 1 = strongly disagree.

INVENTORY ON PREPARING PROPOSALS

Please circle the appropriate number

1 – Workshop Participant

2 – Workshop Staff

3 – Other (Specify) ______________________

Directions:

Read each statement carefully and decide how you feel about it. You will agree with some statements and disagree with others. You are offered five possible answers to each statement. The "undecided" answer should be circled only when you have no opinion. Circle one number following each statement. Please answer all statements.

Use the following categories in responding to the statements:

SA = Strongly Agree
A = Agree
U = Undecided
D = Disagree
SD = Strongly Disagree

Example:

	SA	A	U	D	SD
The city needs to improve garbage collection schedules	5	4	3	2	1

This person feels that garbage collection schedules are inadequate.

Statements	SA	A	U	D	SD
1. The proposal is a means of communicating the proposers's requests, as well as his/her capability to present thoughts clearly.	5	4	3	2	1
2. The proposal reveals the investigators scholarship.	5	4	3	2	1
3. Proposal writing is nothing more than "grantsmanship."	5	4	3	2	1
4. It is important for the proposal writer to have a knowledge of the grantor's proposal review procedures.	5	4	3	2	1
5. Research is basically a chain of reasoning.	5	4	3	2	1
6. Each section of a proposal should build on the preceding section and provide the foundation for the succeeding section.	5	4	3	2	1
7. The proposal should accurately reflect the writer's scholarly ability.	5	4	3	2	1
8. The proposal should provide sufficient detail to convince the reviewer of the writer's knowledge of the subject and of the writer's ability to handle the proposed action.	5	4	3	2	1

Statements	SA	A	U	D	SD
9. The problem statement should be presented in general terms.	5	4	3	2	1
10. The good research limits the statement of the problem.	5	4	3	2	1
11. The review of related research should include all relevant studies previously conducted.	5	4	3	2	1
12. Objectives should be specific, concrete, measureable, and achievable.	5	4	3	2	1
13. The objectives section of the proposal forms the basis for judging the remainder of the proposal.	5	4	3	2	1
14. Objectives should be stated in such a way that they are testable.	5	4	3	2	1
15. Hypotheses should be stated wherever there is a basis for prediction.	5	4	3	2	1
16. The procedure section of the proposal usually receives the least attention from proposal reviewers.	5	4	3	2	1
17. Design, analysis, and personnel are sub-sections typically found in the procedure section of a proposal.	5	4	3	2	1
18. Generalizability of a study is most dependent on the method of analysis used in the study.	5	4	3	2	1

Statements	SA	A	U	D	SD
19. The outline of the procedures section should be adapted to fit the proposed study.	5	4	3	2	1
20. Gains in scores between pre and post testing assures the success of a specified treatment.	5	4	3	2	1
21. The Hawthorne effect produces a net experimental effect that is negative.	5	4	3	2	1
22. The time schedule may provide the reviewer with his first real understanding of what the researcher intends to do.	5	4	3	2	1
23. The budget is an operational statement of the project in monetary terms.	5	4	3	2	1
24. All budgeting provisions should have a counterpart in the project description and vice-versa.	5	4	3	2	1
25. The proposal abstract is written before the proposal is completely developed.	5	4	3	2	1
26. Scientific research is systematic, controlled, empirical, and critical investigation of hypothetical propositions about the presumed relations among natural phenomena.	5	4	3	2	1

Statements	SA	A	U	D	SD
27. A hypothesis is a conjectural Statement, a tentative proposition, about the relation between two or more observed (sometimes unobservable, especially in education) phenomena or variables.	5	4	3	2	1
28. The essence of testing a hypothesis is to test the variables.	5	4	3	2	1
29. A problem is an interrogative sentence or statement that asks: What relation exists between two or more variables?	5	4	3	2	1
30. Hypotheses are always in interrogative sentence form.	5	4	3	2	1
31. Statements of problems and hypotheses in education usually have too much specificity.	5	4	3	2	1
32. A variable expresses an abstraction formed by generalization from particulars.	5	4	3	2	1
33. An independent variable is the presumed cause of the dependent variable, the presumed effect.	5	4	3	2	1
34. Sampling is taking any portion of a population, or universe, as representative of that population or universe.	5	4	3	2	1

Statements	SA	A	U	D	SD
35. A sample is representative only if it has been drawn randomly.	5	4	3	2	1
36. The most common definition of reliability is epitomized by the question: Are we measuring what we think we are measuring?	5	4	3	2	1
37. The most common definition of validity is epitomized by the question: If we measure the same set of objects again and again with the same or comparable measuring instrument, will we get the same or similar results?	5	4	3	2	1
38. Progress and final reports serve monitoring and communicating functions.	5	4	3	2	1

TABLE 4-2
PARTICIPANT WRITTEN COMMENTS ON EVALUATION OF WORKSHOPS ON PREPARING RESEARCH PROPOSALS AND WRITING REPORTS

1. Omit Sunday evening session and guest speaker not necessary
2. Run sessions longer in day and eliminate evenings
3. The program was very good but -- Lower the word level to common terms, for example, dissemination

4. Don't start workshop on Sunday

5. "Good" workshop

6. Need to assure proper meeting rooms

7. Thanks to the team

8. This workshop came at a time when everybody was very busy

9. Avoid night sessions if possible

10. Brief participants on information they might bring with them to help in their effort

11. Use more good references

12. It was well organized, planned in sequential order and executed in that order (no skipping around) which I feel made the conference a success

13. Should have more conferences of this type (excellent conference)

14. Should have had another night session to take care of session after check-out time
    Conference should be planned to end one hour before check-out time

15. Workshop worthwhile

16. I learned a few pointers that will be helpful to me in writing proposals

17. Instructors were positive and interesting

18. I did hope for more information on the types of programs that are available for which proposals might be submitted

19. The negative comments were taken care of when the evening sessions were discontinued

20. The visual aids were relevant and well prepared

21. Is there a film presentation presenting a proposal development procedure available

22. A very good workshop! [illegible] tle tighter organization is needed. The presentations ne[illegible] be more applicable to the kinds of proposals the partic[illegible]s will be expected to write

23. Shorten break an[illegible]unch periods

24. Lengthen the day, if necessary, but eliminate night sessions

25. Conference city should offer a little more than Madisonville

26. Concentrate on real situations, i.e., "what are the real priorities?" Other than that, this workshop has been excellent

27. A good workshop, would like to have some teachers in one next year

28. I especially appreciate the printed materials handed out during the presentations. This will enable us to go home, review, refer to, and make even greater use of the materials presented

29. The workshop was well organized, in logical sequence, speakers were well prepared, rapport was excellent

30. I feel that the workshop was very valuable. Time well spent and will result in future planning being more effective.

31. Don't start on Sunday

32. Don't have night meetings when the conference runs more than one day

33. Over all – very good

34. There might be one more session in actual practice such as the one this morning where we worked on problems encountered on a proposal

35. No night meetings

36. Maybe plan some group recreation for after hours

37. Plan maybe a one hour session that we could direct general questions to the staff that would be of interest to us

38. Good job

39. It was helpful in the small group session to be able to work on an actual proposal for our region

40. Needed more awareness to group dynamics in design at workshop. More emphasis needs to be on people getting to know each other so that they can work together more effectively. I suggest doing this on Sunday night. Then Monday morning kick off with a guest speaker, consultant or whatever.

41. Design of workshop makes me wonder if intent was to throw information at people or the entire scope of proposals (research or other types). Maybe a more "realistic" approach would be to set up workshop according to needs of participants so that they have a positive learning experience in relationship to research and development at the local level. I would like to see greater awareness of the value of R & D in education at all levels. I would hope that this awareness would lead to some kind of commitment to R & D activities in the future

42. Make applications relative – relate priorities of state to same

43. Some presenters dealt with elementary topics

44. Need to work night sessions and terminate workshop Wednesday Noon

45. Excellent workshop! Needs to be made available again to others

46. I felt the workshop might have been presented in two days. Three days seems a bit long. I would suggest going through the formal presentations first and following these with small group sessions at which the proposals are written all at the same session. Also allow a bit more time, if possible, for group discussion and interaction. On the whole, I feel the workshop was beneficial, but just a bit long

47. I was very impressed by the nature of the topics of this workshop and the positive direction received from the directors

48. This has been a very good experience for me as I have never been involved in any proposal writing before

49. I feel that this was one of the most valuable workshops I have ever attended. Everything was very well organized and presented very well. Thanks for making this available to us

50. Very good workshop; however, I think you should consider a 4-5 day workshop instead of 2-3 day. This would give participants more time to digest information and obtain more of the Bureau's services.

51. Good workshop

52. Would add short evening meetings in order to get project written

53. Screening of participants who have had this type of training should be considered

54. Excellent workshop – format was good. I wish the consultants had been available in the evenings for more informal discussion

55. The workshop staff should be commended for a well-organized, well-informed, and enjoyable proposal writing workshop. Much appreciation for the great assistance

56. I feel that the workshop was too much of a "cram course." If a series of these could be given having only a few topics per workshop, it would be much better since you could go into depth on the subject matter. This would definitely help the people out in the field if they could do this for their situation.

57. There was one afternoon session where a little more variance might have helped. It became difficult to sift or get information from one speaker after the other. Generally the organization and operation of the workshop was smooth, informative, and worthwhile

58. The workshop should have been for five days

59. This has met a felt need and I truly appreciate being accepted among the participants. Do it again.

60. This has been one of the most helpful workshops I've ever attended! Do it again

61. Presenters knew their subjects – rapidity with some presenters was too fast

62. Overall, this has been one of the best organized and executed workshops I have attended. However, I would have appreciated clarification on funding sources and appropriations earlier in the workshop

63. Tuesday's session was rather trying. The workshop as a whole was very good

64. All very good and I hope to be able to make use of them

65. I would like to have seen more work done with budget sheets and forms, e.g., VE130, VE131, etc.

66. Some of the presentations were hurriedly presented

67. The time was well spent and very worthwhile

68. Some selected teachers may be included (secondary)

69. Dr. Schneider's final presentation on July 17, morning session should have been the final session. Most often, his presentation was anti-climatic

70. Have one in every region for selected teachers capable of contributing research

71. Excellent workshop--my time was well spent

72. This is the first time I have been exposed to the correct way to write proposals

73. Continue workshops patterned after this one. The staff was well informed and they presented their program parts excellently

74. Select a subject and deal more in depth with that subject to help all regional staffs--at least

75. Show a completed proposal step by step for a school in Kentucky (General to specific)

76. The good positive informal attitudes of the leaders made it enjoyable as well as informative

77. A very good and beneficial workshop. Some presenters need to develop handout material because of the fast pace necessary to complete the workshop

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

All conclusions were based upon the formal and informal evaluations conducted both during and after the workshops and can be held tenable only for the participants included in the workshop. However, generalizations can be made to populations or situations with similar characteristics, but caution must be exercised when attempting to generalize the findings of the study to populations of unknown or dissimilar characteristics.

As evidenced by the evaluative comments of the interpreters, the workshops proceeded according to schedule. Minor adjustments and modifications were made as the need arose. The use of interpreters provided a built-in mechanism for keeping the workshop running smoothly.

It was concluded that the organization of the small groups was a successful technique to use in helping the participants to discuss the information presented in the general sessions and to develop research and development proposals. The interaction of the small group members, their enthusiasm, and the ratings and written comments concerning the small group meetings offered evidence that the small group activities provided excellent opportunity for the participants to learn more about the procedures and techniques of program evaluation.

As revealed by the differences in responses from pre-test to post-test on the "Inventory on Preparing Proposals," the workshop participants increased their awareness and comprehension of proposal development as a result of participating in the workshop. Significant differences were found between the mean pre-test and the mean post-test scores on several items in the "Inventory."

It appears that the conduct of the workshop was acceptable to the participants involved. As revealed by the responses of the participants on the Workshop Evaluation Scale, they were highly satisfied with the conduct of the workshop.

Recommendations

The following recommendations formulated by the workshop staff were based upon knowledge gained while assisting with the development, execution, and evaluation of the workshops. In addition, recommendations were based upon observations made during and after the workshop evaluation. Therefore, the recommendations must be evaluated accordingly. The recommendations are:

1. Inservice education programs, similar to the Workshop on Preparing Research Proposals and Writing Reports, should be continued in future years. Workshops of this nature should be conducted in states other than Kentucky.

2. The format and organization of the workshop program should be continued in future years.

3. The small group meetings should be continued in future workshops similar to the Workshop on Preparing Research Proposals and Writing Reports.

4. A special effort should be made to involve a wide spectrum of professional educators in such workshops in the future.

5. Future efforts such as this one should have an impact study built into the proposal so that the real value of the effort could be determined.

APPENDIX A

WORKSHOP ON THE PREPARATION OF PROPOSALS

July 21, 22, 23, and 24, 1974
Hospitality Motor Inn
Lexington

Conducted by the

Kentucky Bureau of Vocational Education

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WORKSHOP STAFF

Dr. Floyd McKinney, Workshop Director
Director, Program Supporting Services Division

Dr. Elizabeth Ray, Professor
Home Economics Education
Pennsylvania State University

Dr. Herbert Bruce, Director
Curriculum Development Center

Dr. B. Glen Davis, Coordinator
Occupational Information Utilization

Dr. Janie Jones, Director
Occupational Information Unit

Dr. Robert Schneider, Director
Resources Development Unit

Mr. E. Norman Sims
Coordinator of Dissemination

Mr. Charles Wade, Director
Program Development Division

Mr. Arnold Wilson
Coordinator of Personnel Development

PROGRAM

SUNDAY, JULY 21, 1974

5:00 - 6:00 p.m. . . . . Workshop Participants Check-In

6:00 - 7:00 p.m. . . . . Refreshments, Get Acquainted

7:00 p.m. . . . . .DINNER MEETING

Presiding — Floyd McKinney

Welcome and Introductions . . . . Floyd McKinney

Workshop Pre-test . . . . Arnold Wilson

Need for Research and Development
in Vocational-Technical Education . . . . Elizabeth Ray
Pennsylvania State University

Purposes of Workshop and
Workshop Format . . . . Herbert Bruce

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MONDAY, JULY 22, 1974

8:30 a.m.	The Glen Oaks Community	Floyd McKinney
	Developing Ideas Explaining and Stating the Problem	B. Glen Davis
10:00 a.m.	Break	
10:15 a.m.	Small Group Work Sessions	B. Glen Davis Charles Wade Herbert Bruce Arnold Wilson Janie Jones Robert Schneider Floyd McKinney E. Norman Sims
12:00 Noon	Lunch	
1:00 p.m.	Related Research	E. Norman Sims
1:30 p.m.	Developing Objectives	Floyd McKinney
2:30 p.m.	Break	
2:45 p.m.	Small Group Work Sessions	B. Glen Davis Charles Wade Herbert Bruce Arnold Wilson Janie Jones Robert Schneider Floyd McKinney E. Norman Sims

TUESDAY, JULY 23, 1974

8:30 a.m.	Methodology or Procedure	Janie Jones
	Population and Sample Design Data and Instrumentation Analysis Time Schedules Products	
10:00 a.m.	Break	
10:15 a.m.	Small Group Work Session	B. Glen Davis Charles Wade Herbert Bruce Arnold Wilson Janie Jones Robert Schneider Floyd McKinney E. Norman Sims
12:00 Noon	Lunch	
1:00 p.m.	Personnel Plan	Herbert Bruce
1:20 p.m.	Dissemination Plan	E. Norman Sims
1:50 p.m.	Evaluation Plan	Herbert Bruce
2:20 p.m.	Break	
2:35 p.m.	Developing the Budget	Charles Wade
3:00 p.m.	Submission, Review and Funding Procedures	Arnold Wilson
3:30 p.m.	Review and Discussion of a Proposal	Robert Schneider
4:00 p.m.	Recess	

WEDNESDAY, JULY 24, 1974

8:00 a.m.	Managing the Research and Development Project	Robert Schneider
10:00 a.m.	Break	
10:15 a.m.	Small Group Work Sessions Complete Development of Individual Proposals	B. Glen Davis Charles Wade Herbert Bruce Arnold Wilson Janie Jones Robert Schneider Floyd McKinney E. Norman Sims
12:00 Noon	Lunch	
1:00 p.m.	Preparing Progress Reports and Final Reports	B. Glen Davis
1:30 p.m.	Post-test	Arnold Wilson
	Workshop Evaluation	
	Adjourn	

APPENDIX B

WORKSHOP ON PREPARING PROPOSALS

Participant Evaluation of Presentation

Topic: (pre-typed)

Presenter: (pre-typed)

DIRECTIONS: Please circle the letters after each statement which reveal the way you feel about the presentation in regard to the statement.

SA = Strongly Agree
A = Agree
U = Undecided
D = Disagree
SD = Strongly Disagree

1. Topic was needed to fulfill the objectives of the workshop. SA A U D SD
2. Presenter was well prepared SA A U D SD
3. Visuals were helpful in clarifying the presentation SA A U D SD
4. There was sufficient interaction of presenter with participants SA A U D SD
5. Handouts were helpful SA A U D SD
6. Material was too sophisticated SA A U D SD
7. The group work activity was helpful SA A U D SD
8. Additional Comments:

APPENDIX C

PARTICIPANT EVALUATION OF WORKSHOP ON PREPARING RESEARCH PROPOSALS AND WRITING REPORTS

Directions:

Read each statement carefully and decide how you feel about it. You will agree with some statements and disagree with others. You are offered five possible answers to each statement. The "undecided" answer should be circled only when you have no opinion. Circle one number following each statement. Please answer all statements.

SA = Strongly Agree
A = Agree
U = Undecided
D = Disagree
SD = Strongly Disagree

Example:	SA	A	U	D	SD
The city needs to improve garbage collection schedules	5	4	3	2	1

This person feels in no uncertain terms that garbage collection schedules are ina[illegible]te.

Statements:	SA	A	U	D	SD
1. The purposes of this workshop were clear to me	5	4	3	2	1
2. The objectives of this workshop were not realistic	5	4	3	2	1

Statements:	SA	A	U	D	SD
3. Specific purposes made it easy to work efficiently	5	4	3	2	1
4. The participants accepted the purposes of this workshop	5	4	3	2	1
5. The objectives of this workshop were not the same as my objectives	5	4	3	2	1
6. I didn't learn anything new	5	4	3	2	1
7. The material presented was valuable to me	5	4	3	2	1
8. I could have learned as much by reading a book	5	4	3	2	1
9. Possible solutions to my problems were considered	5	4	3	2	1
10. The information presented was too elementary	5	4	3	2	1
11. The speakers really knew their subjects	5	4	3	2	1
12. The small group leaders were not well prepared	5	4	3	2	1
13. I was stimulated to think objectively about the topics presented	5	4	3	2	1
14. New acquaintances were made which will help in my future work	5	4	3	2	1

Statements	SA	A	U	D	SD
15. We worked together as a group	5	4	3	2	1
16. We did not relate theory to practice	5	4	3	2	1
17. The sessions followed a logical pattern	5	4	3	2	1
18. The schedule was too fixed	5	4	3	2	1
19. The group discussions were excellent	5	4	3	2	1
20. There was very little time for informal conversation	5	4	3	2	1
21. I did not have an opportunity to express my ideas	5	4	3	2	1
22. I really felt a part of this group	5	4	3	2	1
23. My time was well spent	5	4	3	2	1
24. The program met my expectations	5	4	3	2	1
25. I have no guide for future action	5	4	3	2	1
26. Too much time was devoted to trivial matters	5	4	3	2	1
27. The information presented was too advanced	5	4	3	2	1
28. The content presented was not applicable to occupational programs	5	4	3	2	1

Statements	SA	A	U	D	SD
29. Workshops of this nature should be offered again in future years	5	4	3	2	1
30. Workshops such as this will contribute little to my work	5	4	3	2	1
31. The references available to participants were not appropriate	5	4	3	2	1

32. Briefly indicate any positive or negative comments you feel would be beneficial to consider in planning and conducting future workshops of this nature

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COMMONWEALTH OF KENTUCKY

Printed with state funds
KRS 57.375